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"Water Thieves:"
Women, Water, and Development in New Delhi, India

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"Water Thieves:" Women, Water, and Development in New Delhi, India

by

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DEDICATION

To my parents,

Who are extremely proud (and very relieved)

To M. (198_ to 2011)

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During the first week of my doctoral degree, one of my professors mentioned that writing a dissertation is similar to running a marathon. And, as I slowly crossed each mile-marker, I accumulated many debts.

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PREFACE

Approximately a month after I started working in Kathputli, Nirmala *ji*[1], a female *pradhan*[2], asked me to accompany her and a few other women to the offices of the Delhi Jal Board (DJB) engineer working in the area, a Mr. Magne. I immediately agreed, excited that the women were asking me to join them as they navigated DJB hierarchies. At the time, I did not stop to question why the women would need me, a relative stranger to their water problems, to speak with a DJB engineer on their behalf. Later, however, I repeatedly saw women from low-income neighborhoods search for a bridge or connection to Delhi's water planning and policy institutions either through local political figures, NGO workers, or in this case, a resident from a higher income neighborhood who was also from America.

The day before our field trip, I met with Nirmala and six other women near the community water collection point to develop a strategy. We met at 1pm, braving the humidity of July, and sat in the dusty open space near the community water collection point just underneath a busy, traffic-heavy road, occasionally interrupted by the metro train as it thundered by above us. We began making lists of questions, complaints and suggestions for the engineer, collecting all the information we would need to be prepared for the meeting next day. Other women who were collecting water periodically stopped

[1] All names in the document have been changed to protect the identity of the informants.

[2] Ji is an honorific to indicate respect; pradhan is the term for a community leader.

by to ask us what we were doing and offer suggestions, or simply to chat with one of the other women. Despite the heat, we sat for two hours talking and planning. We were going to ask the engineer to procure a new water pipe for the community. The current pipe was rusty, old, damaged, covered with grime, and extremely brittle. Residents commonly called it 'geele atte ki pipe' (pipe made of wet dough) or 'chhanni' (sieve). The water that came through this pipe was yellow in color and sometimes had a sewage-like smell.

I remember thinking, as we were sitting in the heat near the water pump, that maybe this would be the moment of where my relationship with the women from Kathputli would transform, that maybe I now would become a part of their daily activities involving water. Indeed, this trip to the office of the DJB junior engineer did become a watershed moment in my work, but not because it strengthened my relationship with the women or allowed me to immerse myself further into the community. Instead, it became the event that began to define my understanding of the pervasive gendered politics in Delhi's water sector.

On the morning of our trip, I arrived in Kathputli at 6AM. I was early. It was going to take at least an hour to get to the DJB office and we had planned to arrive by 8.30AM. As I waited for the women to finish their morning tasks, I could see the sights and hear the sounds of a typical Kathputli morning. Women in brightly colored saris were rushing to get water, cook food, wash clothes. Children and men were performing their morning ablutions in front of their homes. Shops were opening. I could smell everything

from food being cooked to the excrements that were accumulating in the open drains as children squatted over them.

Around 7AM, the women began to congregate at our meeting spot near Nirmala ji's house, and we walked together to the bus stop. We missed two haphazardly moving buses that didn't ever come to a complete stop, but finally at 7.30 AM, we managed to get on a bus. As we stood in the front of the crowded vehicle, Nirmala ji warned me, "Get out quickly when I tell you, the driver only slows down near the stop." In response, the bus conductor, standing right beside us, laughed and said, "we'll stop…you haven't ever gotten off a moving bus, have you?" My "no" was very amusing to all the women and to the bus conductor. This was the first instance, among many during the day and during my fieldwork, that made me acknowledge how differently women from Kathputli and I interacted with city spaces. This became even clearer as we reached the engineer's office.

The bus did stop completely as we disembarked, and we began our mile-long trek to the engineer's office. It was 8.45AM by the time we arrived and we walked straight in to the office. The engineer was sitting and having tea with a colleague. His assistant came running behind us, and ordered the women to leave the office and wait outside. The engineer stopped us and spoke directly to me (in English) – "are you from an NGO? What is the problem?" The women immediately started speaking – '*didi*[3] (older sister) ask him about the pipe, tell him about the color'. His English comment, not understood by most of the women, made me the only person who could tell him about the 'problem'.

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3 'Didi' is the term for an older sister; it is also used to indicate respect.

I replied in Hindi – "we have come from Kathputli Colony and wanted to talk to you about some water problems. Nirmala can tell you about them, if you could spare some time for us". As soon as Nirmala started talking, Mr. Magne asked her to wait. He then asked her, "this lady (pointing to me) that has come with you, you trust her, right? Why don't you wait outside and I can talk to her and she will explain your situation? Does that sound ok?"

It did not sound 'ok' to me, but the women all agreed and gave me a few instructions as they filed out of the room and squatted outside in the hot, dusty courtyard. They seemed to accept that I, who did not live with the same water problems as they did, would somehow be able to represent them. The engineer who was responsible for the community and knew that I was not a Kathputli resident seemed more comfortable talking with me than with Nirmala and the other women. This system seemed somehow broken. As I sat in the engineer's room, listening to the whirring sounds of the air conditioner, the faint murmurs from the courtyard, and the assistant's voice explaining to the engineer how all of us managed to breach his office space, I began to realize that the decision-making and grievance redress spaces related to water in the city were often barred to the women who spent a large part of their day collecting, storing, managing and worrying about water.

As the engineer finished his conversation with his assistant, a cup of tea appeared in front of me and he gestured with his hand that I should drink it. Uncomfortably sipping the too-sweet tea, knowing that the women I came with were outside in the heat, I once

again requested that the engineer talk to them directly. I told him that I would not be able to explain the women's water problems as well as they could. He laughed and said, "best effort kariye" (do your best). He added that it would be very chaotic to have all of them in the office and this was a much better way for him to know what was really going on.

Finally, realizing that I couldn't convince him to let any woman from Kathputli in the room or to go out and talk with them, I began highlighting the points we had listed the previous day. He heard me out and then called his assistant back into the room. I knew his name was Dharam: I had heard it before from Kathputli residents. He was one of the people you could pay bribe money to for motors, pipes, and other 'benefits' the slum dwellers needed regularly. He was also the only DJB employee who visited Kathputli regularly, and so, no one ever complained about him. Dharam was going to ride his bike and meet us at Kathputli and then report back to the engineer regarding the pipe we wanted replaced. I told Mr. Magne that I had pictures he could see, and he said Dharam would give him an honest appraisal and that "I shouldn't worry". Then, ten minutes after it began, the conversation related to Kathputli was over, and the focus was on me. As I tried to leave, another cup of tea appeared and then he began asking to me about my work:

> **Magne:** America se ayi ho? (You've come from America), why are you in Kathputli? It is such a filthy area. Don't worry about the pipe, Dharam will go and take care of everything. You know, I am sure you've heard stories of neglect from them (gesturing towards the courtyard). But these people leave taps open. Put motors. Waste water. Steal water. How many times I have gone and spoken to them. You also talk to them and explain that water has to be managed properly. You know I have daughter your age, she studies psychology. Like you, she also travels all over the city by herself. You girls today are very adventurous.

His comment depoliticized the very real water problems of Kathputli and also redefined my role in the Delhi's water management. I was permitted into the masculine space of decision-making and grievance redress but my 'report' had to be corroborated by Dharam. My role in this situation was to help the women learn better water management strategies as DJB employees, such as the engineer, attempted to do regularly. In this way, criminalizing the women's water practices provided the justification for any unjust DJBs practices.

My presence in the engineer's office, after it had been passed through a socio-economic class filter, was justified (and further depoliticized) based on my role as a student. I should have, according to the engineer, been focused on teaching the women from Kathputli how to better manage and use water. The women from Kathputli, on the other hand, were completely excluded from this space of decision-making, and were made to wait outside as their water problems were discussed. As I learned later, women from Kathputli (and other similar neighborhoods) had no access to formal networks of grievance redress through the *bhagidari* system[4] or any other government schemes; thus, their attempts at addressing their water related issues were limited to informal strategies such as arriving in groups, unannounced, at their local DJB offices.

[4] Bhagidari Program' was started by the Delhi Government in 2000 to allow interactions between public agencies and citizen groups. The aim is to "develop a genuine dialogue with between public agencies and citizen's groups, in an attempt to resolve the various problems being faced by the city's residents. These problems include water shortage and pipe leakages, choked sewers, etc." As a part of this program, monthly meetings are held where representatives of citizens' groups (Resident Welfare Associations) interact with public officials and talk about their issues (Observer Research Foundation, 2008). However, because slum residents access water through extra-legal methods, they have no access to this system.

After many other similar interactions, I found that gender relations in the context of water access processes are not static. In this instance, even as I came in with the women from Kathputli, we were assigned different roles immediately. In being thought of as an NGO representative, the engineer's interaction with me shifted, and on learning that I was a student from America, my gender role was again re-imagined. As a result, the space we were occupying and my interactions with the engineer were also reconstructed. Thus, gender and water, as they interact with each other and with other social, political, economic, ecological and physical factors, are constantly and *mutually* produced and reproduced. Water and gender, then, are deeply connected at multiple scales and in multiple ways. Through my research, I am attempting to theorize water and gender and unpack the connections between them.

"Water Thieves:"
Women, Water, and Development in New Delhi, India

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The University of Texas at Austin, 2011

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As Indian cities expand, conflicts over limited potable water supply and access are intensifying. These conflicts place water at the center of socio-spatial, cultural, political and ecological tensions in the city. Women from urban poor neighborhoods resort to stealing, storing, buying and borrowing water to meet the daily needs of their households. However, land tenure determines access to water. Exercising its juridical powers, the state legalizes certain spaces and practices (planned neighborhoods; buying and storing water) and criminalizes others (slums; stealing water). Thus, the state controls: i) who has legal access to potable water; ii) how potable water is legally collected; and iii) where potable water is legally available.

My research uses a mixed methods approach to analyze water access, supply and management in New Delhi, India. Using primary data collected in 2009-2010 through surveys, interviews, focus groups, and participant observation, I analyze how women from two urban poor neighborhoods of New Delhi (one, a regularized inner city slum and the other, a resettlement colony) access and use potable water. I also investigate how city

planners, state officials, and engineers, perceive water needs and water collection strategies of the residents from low-income neighborhoods.

My findings indicate that the state's responses to the lack of water security in Delhi are limited to technical and engineering solutions aimed at addressing the 'water problems' (Zerah, 2000), which, in turn normalize discourses of scarcity (Mehta, 2005; Swyngedouw, 2003), theft and overuse (Baviskar, 2003). I argue that water security is a discourse that draws on the technicist and economistic approaches of Western-dominated international planning, and therefore all attempts to address water (in)security that emerge from this discourse leads to water policies that ignore social constructions and context of water, especially gender. I found that women from low-income neighborhoods bear a disproportionate burden of the social, political, and physical consequences of limited potable water access. In planned low-income neighborhoods, women's vulnerabilities emerging from lack of access to potable water are exacerbated. This implies that planning in cities such as New Delhi is unable to address the daily water needs of urban poor women. These findings indicate that planning initiatives in cities such as New Delhi, should explicitly respond to the current practices and needs of women, thus minimizing the distance between technocrats and the urban poor.

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ADB: Asian Development Bank

BJP: Bhartiya Janta Party

CPWD: Central Public Works Department

CSI: Child Survival India

CURE: Center for Urban and Regional Excellence

DCB: Delhi Cantonment Board

DDA: Delhi Development Authority

DJB: Delhi Jal Board

DUEIIP: Delhi Urban and Environment Infrastructure Improvement Project

DWSSRP: Delhi Water and Sewerage Supply Reform Project

FORCE: Forum for Organized Resource Conservation and Enhancement

GAD: Gender and Development

GOI: Government of India

HDR: Human Development Report

IIR: India Infrastructure Report

JE: Junior Engineer

JJ: Jhuggi Jhopdi

JMP: Joint Monitoring Programme

MARG: Multiple Action Research Group

MCD: Municipal Corporation of Delhi

MGD: Million Gallons per Day

NCR: National Capital Region

NDMC: New Delhi Municipal Corporation

NGO: Non Governmental Organization

NIUA: National Institute of Urban Affairs

NPEW: National Policy for the Empowerment of Women

PWD: Public Works Department

TCE: Tata Consulting Engineers

UN: United Nations

UNESCO: United Nations Educational, Scientific and Cultural Organization

UNHABITAT: United Nations Human Settlement Programme

UNICEF: United Nations Children's Fund

WHO: World Health Organization

WID: Women in Development

YMCA: Young Men's Christian Association

INTRODUCTION

The underlying assumption of this project is that current planning and policy strategies surrounding urban water access, distribution and management in New Delhi, India are inequitable, and that the burdens resulting from these inequities are disproportionately borne by urban poor women. I had learned, through pre-dissertation research and literature reviews, that water was a deeply contested resource in New Delhi. However, during my time in the field, I realized that water is not simply a contested resource; it is, in fact, one of the most critical tools in the city's political arsenal, such that politicians commonly use improving access to potable water as a platform to run for elections in the city, and it is also a deeply gendered issue.

A central focus for my project is to understand the reasons and implications of limited potable water access from the perspective of women. Several scholars have also analyzed the lack of access to resources, including water, using households as their unit of analysis (Agarwal, 1992; Mehta, 2005, 2007; Sultana 2002; Folbre, 1997; Zwarteveen, 2002). However, a review of literature indicates a paucity of work analyzing women's engagement with water in urban spaces in the Global South (O'Reilly, 2004). Thus, even as analyzing the literature on gender relations within households remained critical to my work, my research analyzes the role of women in accessing, using and managing potable water in multiple spaces across the city and at multiple scales.

Despite the new water management techniques and strategies emerging in the city, water remains tied to traditional roles, and the responsibility of collecting water is on women. Thus, as suggested by scholars in the field of urban political ecology, such as Swyngedouw (2000, 2003, 2006); Kaika (2000) and Bakker (2000, 2003), access to resources such as water is based on power relations that are integral to the processes of production of 'urban nature' at multiple scales. Feminist scholars such as Rocheleau (1996), Agarwal (1992, 1996) and Leach (2007) add that power structures that determine right to access resources, such as water, are gendered. Roy (2003), in her research on poverty and land rights in Calcutta, argues that the negotiations of both de jure and de facto ecological (land, water) rights in urban areas remain primarily a masculine enterprise because, simply put, men own land.

Water access, then, is tied to land, which is a scarce resource in Delhi (a city of 20 million residents), and in other urban areas of the Global South. The land in the city is often invaded by landless in their attempt to find shelter near places of employment. Such slums[5], which are sometimes located on prime land, are often spoken of as 'eye sores', 'sources of land and water pollution', 'public nuisances' and 'homes of water thieves'. These negative constructions serve to justify planning strategies of moving slums to the outskirts of the city in order to reclaim valuable inner city areas for development. In New Delhi, the peripheral area where the poor are relocated is considered 'planned' and is

[5] A compact area with a population of at least 300 persons or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities (Indian Census Board 2000, adapted from the United Nations Human Development Report 1998).

(supposedly) developed into residential neighborhoods, but the development remains incomplete due to the limited access to water, food, schools, transportation and employment. These areas also lack the informal networks that govern the life in inner-city slums.

Thus, even as New Delhi is celebrated as a 'world class' city in the media, creating a sense of pride among the more affluent residents, the urban poor are systematically being excluded from the city, not just through neglect, but also through state[6]-sanctioned policing and planning strategies. The impacts of this shift are felt most by women from low-income neighborhoods. While land control is the key motive behind changes in the city, access to potable water remains a critical piece in this emerging story of New Delhi.

New Delhi, then, is a place defined as much by what is ignored and made invisible, as it is by what remains visible. Due to the nature of my work and personal connections, I spent an equal amount of time in both the visible and invisible parts of this New Delhi. I was, on one hand, part of the group that was asked to be proud of the world-classing project, and on the other, I worked closely with the people who were being forced out of the 'world-class' city. This continuous shifting between such contradictory parts of the city, informed my key research question and six sub questions: What is the role of planning in water access strategies used in low income neighborhoods of New

6 In order to avoid essentializing the 'state', for this dissertation, I have attempted to get multiple perspectives from a diverse group of officials, technicians and other government employees across scales. However, the static view of water within majority of state based documents and policies allow viewing certain discursive strategies – scarcity, overpopulation – as being 'state' strategies.

Delhi, India? The sub questions are as follows: a). How does the water delivery system in Delhi function, and what key policies govern this system; b). Is the water distribution inequitable at the scale of the city and between the two research sites; c). What are the strategies used by women to appropriate water; d). What are the implications for women that result from the everyday struggle to appropriate water; e). What are the everyday practices of state and city officials and technicians in the water sector; and f). What lessons can be drawn from women's everyday strategies to improve urban water systems.

In order to address my research questions and better understand the impacts of inequitable water access, distribution and management in Delhi, my research attempts to document the water access strategies employed by women from low-income neighborhoods, and, secondly, to examine how city planners respond to the inequities in the city's water distribution system. Through observations, focus groups, and interviews with women from two low income communities in New Delhi –a planned resettlement colony and an unplanned slum – I seek to analyze the role of planning strategies in shaping the relationship between New Delhi's poor women and potable water. Through analysis of policy and planning documents and through interviews with public officials, I am also analyzing how policy makers and government technicians interpret women's water access strategies. During my analysis, I found that there are numerous municipal agencies that work on service delivery in Delhi, along with private organizations, community groups, NGOs and political parties. This multitude of actors results in disjointed water supply and management in the city.

Through my analysis of official documents from multiple public agencies, private organizations and of women's water collection strategies in New Delhi, my work contributes to the literature on water security. Currently, water security is premised on the continuous availability of an adequate quantity and quality of water for production, livelihood, and health. From this perspective, water is a basic human-necessity (UNHABITAT, 2010), a commonly held resource to be managed and distributed wisely, equitably and efficiently for the common good. However, under the influence of neoliberal strategies of development, water is also increasingly seen as an economic commodity (Government of India, 1987, Goldman, 2007). Because of this economization of water, mega-cities in the Global South, such as Delhi, are basing their water delivery on economic rationales, such as 'willingness and ability to pay', as part of their drive for modernization. I am arguing that water security is a discourse embedded within the broader development project, premised on linear narratives of modernity and drawing on Western, technicist, and economist assumptions, which leads to practices that ignore the social and gender context of water. This, in turn leads to the reproduction of inequalities in water access and inequities in how people suffer because of the water access problems.

Partly because of the technicist and economistic planning strategies that dominate the work in water security, water distribution in cities of the Global South remains extremely differentiated. Although New Delhi (and other megacities in the Global South) does not lack potable water per se, the economization of this common good has led to increasingly uneven distribution of safe and adequate water, especially to marginalized

social groups. As a result of these development ideas, the urban poor are often outside the purview of public policy. These exclusionary practices of water delivery have forced poor residents—particularly women—to 'illegally' appropriate water for their basic survival, which in turn has cemented unequal gender relations and undermined women's health and quality of life. At the same time, this neoliberal turn in water management has failed to produce major improvements in the water distribution systems. Thus, the megacities in the Global South, such as New Delhi, are facing a fundamental contradiction: as they increasingly alter their water delivery in a bid for development and modernization, distribution and access is becoming more inequitable, social development and public health suffer, gender inequalities are heightened—and the water delivery system remains inefficient and poorly managed.

However, in my interaction with government agencies, I was routinely told about technological advances in water distribution and management, and about plans for new water treatment plants in the city. As probably intended, I was impressed. The powers that be, it seemed, were thinking of ways to meet water shortages. However, I also learned that the multiple public agencies in New Delhi's water sector work at cross-purposes, often negating the technological advances due to the socio-political nature of water. As I spent more time in the two low-income communities, I also realized that the language of policy and proposed solutions was different from the language used by the people who lived in these neighborhoods. I also realized that the meanings being assigned to water in the two narratives were different, and I began to observe the multiple, sometimes conflicting, narratives within the water policy environment. The way policies

were being written was different from the way technicians were implementing them. There were clear, unwritten rules that were governing knowledge production in the public institutions, and multiple meanings of water emerged from these knowledges. On the other hand, the rules and knowledges related to water at my research sites were very different from the ones in the policy environment, and were no less significant to the residents. Where one set was derived from city-level politics, science, and engineering, the other set was determined by need, traditions, socio-cultural customs, hierarchies, and neighborhood politics. The lack of communication between these two groups and their narratives became critical to my understanding of Delhi's water situation. I was trying to bridge the visible and invisible Delhi, using potable water as my channel.

The disconnect between state planning practices and the everyday water appropriation strategies of the urban poor is not only limited to New Delhi, but is a phenomenon common to other cities in the Global South. Elsewhere in the Global South, rapid urbanization has also led to a supposed water crisis, which, in many cases, has become a discursive tool to justify inequitable water policies. In early 1900's, no more than seven percent of the world was considered urban; in 2010, approximately 50 percent of the world's population is urban. These figures become ever more dramatic when seen in the context of the Global South, where the number of urban residents has increased from 0.1 billion in 1950 to the current 2.25 billion. This second coming of urbanization (Davis 2006; Gugler, 1969) has led to a significant increase in levels of poverty, poor housing, employment shortage, and environmental stress in the cities of the Global South. For many, Harvey (2000) argues, cities of the 21st century emerge as "dystopian

nightmare in which all that is judged worst in the fatally flawed character of humanity collects together in some hell-hole of despair" (24).

The extensive literature on urbanization, however, is split on the causes and implications of this phenomenon. While modernization scholars implicate rapid industrialization of developing countries as a key cause of urbanization (Roger and Williamson, 1982, Sovani, 1964), urban bias theorists (Lipton, 1984) argue that developmental bias towards cities is the key reason for rapid migration to Third World cities[7]. Economists and world system scholars assert that foreign investment that causes loss of agricultural land and income is responsible for forcing rural residents of historically agrarian societies to move towards cities (Walton, 1977). In my dissertation, I focus on the socio-environmental changes that are a part of sustaining rapidly growing urban areas of the Global South. I argue that urbanization is a part of the socio-environmental transformations in the Global South, and these transformations are in turn producing new urban environments. Thus, urbanization becomes both the cause and effect of changes in the urban areas of the Global South. In order to understand urbanization, it is necessary to understand the political, economic, social, and cultural processes and problems associated with this process. Harvey (2000) posits the question of

[7] Borrowing Robinson's (2002) categorization, I will refer to the cities of the South as 'Third World cities'. She uses this terminology to highlight the persistent dualism in urban studies (and planning theory) between West and Third World, which corresponds directly to the dualism between theory (west) and development strategies (Third World). To reflect these categorical ascriptions, in the context of this dissertation 'global cities of the South' (Rao, 2006), "globalizing cities" (Marcuse and van Kempen, 2000) and "future global cities" (Koolhaas, 2000) will be referred to as 'Third World cities'. Even though the term 'Third World cities' is considered more value laden than other titles for these cities, Robinson argues that the west/third world dualism needs to be acknowledged and responded to in urban theory and urban planning (Roy, 2007).

urbanization in the 21st century as one of defining how space-time, environment and place will be produced within what social processes and with what effects. Urbanization, then, is a web of complex relationships that are, I argue, globally articulating themselves in an exceedingly uneven manner.

Urbanization has been defined as a shift from a primarily rural to an urban society. This rural to urban migration is the outcome of socio-ecological, socio-economic and political developments (Davis, 1996; 2000; Gugler, 1964). Urban areas in the Global South, including in Africa (see: Tarver, 1996) and Asia (see: Sivaramakrishnan, 2005), emerge as seemingly attractive options for the rural poor due to the promise of employment, education, water and electricity. Gyabaah (2005) argues that rapid urbanization in the Global South is a result of market forces and government policies that lead to simultaneous processes of change in livelihoods, land use, health and natural resources management, including that of water, soil and forests, which in turn spark reactive changes in local governance. Government policies, budgets, and infrastructure development often favor urban spaces over rural areas.

I argue that this urban bias in national policy, as articulated by Gyabaah (2005), Tarver (1996) and Sivaramakrishnan (2005), also translates to socio-economic biases within the city. Once poor residents arrive the large cities of the Global South, such as Mumbai (Gandy, 2008), Senegal, Benin, (Colingnon and Vezina, 2000), Lagos (Simone, 2004) and Delhi (Lundqvist, et al, 1997), they are often forced to live in sub-standard conditions with limited or no access to sanitation and potable water. Still, the urban poor

are often overlooked by city officials and policy makers, who instead privilege formal, planned neighborhoods and focus on creating development. In fact, even though slums in most Third World cities are growing at a rate 250 times faster than the formal city (Davis, 2006), the focus of planning and policy initiatives remains on the elite neighborhoods. Thus, urbanization processes are creating a fundamental contradiction for countries in the Global South: as rural residents migrate to urban areas in search of better access to food, water, employment, and education, they are forced in live in slums that lack these very amenities. Vulnerable rural residents become the vulnerable urban poor.

Urbanization also impacts the production of nature in the city or, as Swyngedouw and Kaika (2000) argue, how the city can be understood as the result of "a process of urbanization of nature" (568). According to Swyngedouw, in the ecological tradition within urban theory, nature was fetishized as something separate from the urban, and from socio-political actions (2000). This, Harvey (2000) argues, prevents us from including urbanization processes in ecological analysis (42). Instead, urban nature, that is, nature as produced through social, cultural, technological, physical and environmental processes (such as the production of potable water), is a necessity for city life. City and nature must be understood as integral to one another: both are produced by, and both produce, processes of urbanization, as a result creating a fragmented urban landscape.

As a result of this urbanization of nature, the city and its slums remain in a state of constant flux. Slums are moved out to the current periphery for reasons of beautification, infrastructure development, population management and environmental protection

(Dupont, 2003). However, this geographic movement does not include improved access to resources. I worked in two low-income areas in New Delhi, one a peripheral planned community where slum residents from the other parts of the city had been relocated, and the other an unplanned neighborhood in the inner city--and both lacked access to potable water.

Despite the clearly uneven access to basic resources, one question that remained unclear until the end of my fieldwork at both research sites was: Why didn't the urban poor get angry? During my work in Delhi, I was angry for the residents at my site. Before I began my research I believed that, as a resident of Delhi, it was my right to demand access to certain services. I also believed that it was my right to be angry at the state. The women I interacted with during my research did not seem to claim this right. The low-income neighborhoods, whether it was their planned or unplanned iteration, only filled the cracks in the physical space, the policy space, and the infrastructural space of the world-class city. Those who managed the world-class city were allocating the right to the city. Urban poor residents never acquired the right to the city, or to its resources, such as water.

This lack of basic rights became more and more clear when women from urban poor communities spoke of 'free water' and of water as 'human right', but never of water as *their right*. I began to understand that their lack of anger could be traced back to the shifting power relations in the city. The urban poor residents derived their sense of belonging in the city from the local politician whom they had voted into power. They also

derived their right to water (or land, or electricity) from him or her. The hopes and rights of the urban poor of Delhi were cast into the ballot box with their vote, and s/he who won the election also won control over these rights. The power relations between the poor, the politician and the engineer/technician shifted constantly, and, even though women used different strategies to access water, they didn't seek systemic changes in the ways water was being distributed in the city. In fact, water collection remained only an 'everyday practice' and not a political issue in the city. To continue challenging what was constantly being made 'legal' in the city, the urban poor did not use anger; rather they seemed to work harder towards keeping their resistances hidden (Bayat, 2000).

The women of almost every slum settlement I visited complained of limited (or no) access to potable water. I also spoke to women from Delhi's more affluent neighborhoods and was, in most cases, told that access to water remained a major problem, and to meet needs residents had installed personal water pumps and overhead tanks.[8] This further deepened my consternation regarding why certain water distribution and management decisions were being taken in Delhi, and also how the residents and policy-makers of Delhi were defining a 'water thief'. Ground water being taken for personal use in affluent neighborhoods, many times without the necessary permissions, is usually ignored. Even in several urban poor neighborhoods, the local public officials ignore 'water theft'. On the other hand, when the city wants land for development, city officials begin to point out how people in the slums steal water, and this becomes a part of the argument for displacement.

[8] Deya Roy, Jawaharlal Nehru University Researcher, personal conversation.

Thus the visible/invisible and legal/illegal dichotomy is present in all decision-making processes in New Delhi. Decision-making surrounding water emerges as simultaneously strategic and arbitrary, so that practices of low-income residents that have been overlooked for years--for example the 'stealing' of water--become reasons for state surveillance and policing when this is politically expedient. The arbitrariness of such public decisions makes it harder to resist them, and in this way, access to potable water becomes a part of controlling 'public' land. Ultimately, the rhetoric of overpopulation, development and scarcity emerge as discursive tools through which differentiated supply and access to urban nature (water) is continuously constructed and normalized. In this way, the water practices of the urban poor are simultaneously criminalized and depoliticized, so that their resistances to uneven resource distribution remains invisible or becomes 'illegal'.

The 'New' Delhi where I conducted my research is a very complex city, with traditions that date back to pre-colonial times and ambitions that travel forward to London and Paris[9]. My perception of the city changed throughout my research, shaped by what I knew and had seen already, that which I discovered, and that which I still couldn't see. The same policy makers who forced people to move from their homes of 30 years ignored the few who laboriously made their way back from the periphery to live in their

[9] In talking about New Delhi's development, chief minister Sheila Dixit commented that "we have a dream that Delhi should be a foremost city, like Paris, and London …we are doing a lot" as reported in "Euro-IV Fuel Launch: A historic step: Dixit". Mar 24, 2010. http://www.thehindu.com/news/cities/Delhi/article296995.ece

old neighborhoods. The same urban poor who stood in lines for hours to get access to some potable water did not shut off taps in their neighborhoods after use.

At many stages in this research, I wanted to romanticize the urban poor and their ways of life. It was, in some ways, my attempt at apologizing for being from the 'visible/legal' Delhi, or for being the *America-wali didi* (older sister from America). But I was forced to encounter a splintered structure of power and an intricate web of relationships that defied all romantic notions. The water-mafia that emerged in the slum communities to control the limited supply of water, the social hierarchy that prevented some women from accessing community water sources, the religious discrimination that called for separate taps, and the shifting of public pipes into personal home to prevent the neighbors from accessing water, were as much a part of the politics of water as the unequal water distribution perpetuated by the state. While state planners often focused on technical and scientific issues related to water, often in order to depoliticize the struggle for water, in the communities, memories, traditions, and (failed) hopes dominated discussions of water. Through my research, I have attempted to uncover these often contrasting perspectives and practices in both the visible and invisible 'New' Delhi. I neither belong to the visible nor to the invisible city, but, through my research I have inhabited both, and I am writing of and from both.

During the writing of this dissertation and during my fieldwork, I refer to a series of key, different water-related concepts, including such as 'water management', 'water

access processes', and 'water security'. These concepts are defined below as they have been used in the context of this dissertation.

'***Water Security***' is a discourse that includes state institutions and engages with knowledge and narratives of people accessing water. For this dissertation, borrowing Escobar's (1995) use of the term discourse, I argue that the definition of water security includes the 'triad' of narratives, institutions and subjectivities. Water security is currently talked about in terms of technological rationality and water demand-supply, which feeds into the policies and planning strategies that are based on such rationalities. However, I wish to argue that water security is premised on narratives of 'modernity' and the production of non-western 'underdeveloped' subjects. By arguing that water security is a discourse, I am attempting to include social, political, and gender dimensions of water and challenge the current technicist/economist approaches that reproduce inequalities in access to water.

Water Access Processes include the act of collecting, storing, and managing water for households. These are affected by the decisions made at the level of the state (where water is made available, how much water is made available), and at the level of the community (who will collect water, when water is collected). Thus, water access processes are affected by social, political, ecological and economic factors across multiple scales.

Water Management: Water management is the sum of the many ways individuals and institutions (both public and private) plan and manage the water resources within the

city. It is a continuous and complex process through which certain interests may be privileged over others. It includes formal institutions and informal arrangements at multiple scales.

I begin **Chapter I** with a discussion of the research design for my project. Following this review, in **Chapter II,** I analyze the emerging critique of planning in the Global South and, borrowing from feminist political ecology and urban political ecology literature, attempt to bring gender, and socio-political production of urban nature into a reimagined 'international planning'. In **Chapter III,** building upon the theorizing around gender and water from the previous chapter, I critically analyze water security as a discourse. This leads me to my analysis in **Chapter IV,** where, using the insights around gender, production of urban nature, and water security from the previous chapters I examine the history and socio-political context of water policy in India. Following the analysis in previous chapters, in **Chapter V** I critically engage with the socio-political construction of gender in India's water sector. Then, in **Chapter VI**, I focus more specifically on mutual constructions of gender and water in Delhi's water sector. Drawing from the theoretical insights around gender and water, in **Chapter VII** and **Chapter VIII** respectively I discuss the water collection strategies of women from Kathputli Colony, an unplanned slum of New Delhi, and Savda Ghevra, a planned resettlement colony located at the periphery of the city. In **Chapter IX**, I review how women continue to bear the burden of responsibility for water collection, and are thus severely impacted by lack of access to potable water. In this chapter, I also analyze how

planning strategies in New Delhi are worsening the impacts of lack of access to potable water for women from low-income neighborhoods in the city.

CHAPTER I

Research Design

In an attempt to bring a discussion of gender and the socio-political production of urban nature into an 'international planning theory', and more specifically to engage with the discourse of water security, I have used a combination of methods: collection and analysis of texts (including government documents, relevant literature from agencies such as World Bank, and other non-governmental organizations), comparative case study of two slum settlements in Delhi, empirical and qualitative neighborhood analysis, direct and participant observations, focus groups, and in-depth semi-structured interviews with government officials, NGO workers and female residents from both communities. Due to certain limitations - not having access to the all members of the households, specifically the men, safety concerns, and time constraints - my project analyzes the water access strategies used by women from both sites instead of using households as my unit of analysis. While an analysis of households would provide information to evaluate gender relationships (see: Sultana, 2005; Cleaver, 2000; Agarwal, 1996), focusing on women's strategies allows me to analyze the critical relationships that emerge between state agents and women around water, and the relationship between women and urban spaces, both of which are currently understudied. I will begin the methodological explanation for my project with a justification for using the comparative case study approach and for my choice of case studies/research sites.

ETHNOGRAPHIC CASE STUDY RESEARCH

Ethnographic work such as this is critical for understanding planning practice, theory, and for moving towards planning praxis (Flyvberg, 2006). Later in this dissertation, I argue that Western standards are accepted as norms in planning practice and theory. Planning strategies emerging from universalist conceptions of 'developed' and 'planned' are unable to address the existing difference in cities. Thus, Sandercock (2000) argues that "difference can only be accommodated on a case by case basis" (12). The role of ethnography, then, is revealing difference, and as a result, uncovering some critical challenges for planning practice and theory. Flyvberg (2001) argues that planning cannot be confined to narrow theoretical categories and it is "constitutive of what it means to be human" (287). Ethnographic research allows scholars to explore this human engagement of planning. It also allows us to challenge the homogeneity and universality in planning. Because my work critically examines water access processes at multiple scales and from multiple perspectives, I use ethnography both as a way to identify and understand the water access strategies of women in low-income neighborhoods of New Delhi, and as a way to understand the values of planners and policy makers. Ultimately, I used urban ethnographic methods to understand and analyze the value-laden nature of planning. By closely observing everyday life, I attempted to address larger problems in a way that is contextual, detailed and also as general as possible (Flyvberg, 2001).

Flyvberg (2001) and Yiftachel (2001) argue that planning research assumes that planning is progressive and rational. Ethnographic research such as mine, which attempts to study why certain planning strategies are employed and why they fail, offers a

sustained critique of planning practice and theory. This, Flyvberg (2001) argues, is necessary for planning to grow as a practice and as a theory. Thus, ethnographic research can contribute to planning practice and theory by telling the story of planning practice (Flyvberg, 2001; Sandercock, 1998). It can include the multiple actors and narratives that are a part of planning, including state, societies, institutions, and organizations. The use of ethnography allows researchers to examine planning theory and practice from multiple points of entry, analyzing in depth the connections between different actors and different scales (Flyvberg, 2001). Thus, ethnographic planning research can help in identifying, and eventually addressing the biases within planning.

Ethnography is also necessary to critically examine the patriarchal biases within planning (Gleeson 1999; Sandercock, 2001). Echoing Flyvberg's (2004) analysis, I argue that during an ethnographic study, the researcher also becomes a part of the local power relations that s/he studies. For my work, understanding my own position, values and power became critical for identifying both the male and class biases existing in water access processes. My own perspective and position as a planning researcher added to the understanding how certain biases impact women's perception of their right to the city's water, and affect the way public officials implement planning strategies. Thus, the role of ethnography is critical for unpacking how planning strategies are developed, implemented and negotiated in New Delhi.

To better address my research questions, then, I required a situated knowledge of how the women from both communities access potable water to meet their daily needs,

and of how Delhi's water related policies are written and implemented. I spent an extended period of time at both research sites (3-4 months). I gained access to Kathputli colony through approximately 3 weeks of direct observations at the local water collection point, after which the women began to recognize me and were willing to talk to me. Entering Savda Ghevra was harder due to the lack of any designated community gathering place and I had to rely on a local NGO to introduce me to the residents. In approaching the local NGO, my credentials as a planning graduate student from a major US university were helpful. Once women from both communities became comfortable with my presence in their spaces, I began to spend an increasing amount of time at the water collection points at Kathputli and tanker points in Savda Ghevra, becoming familiar with water collection behaviors and techniques (time spent, cleanliness of area, number of cans/buckets filled per person and other information such as interaction among the women collecting water and their attitudes towards water).

The goals for this research project determined my choice of using the comparative case study approach. Muir (2008) argues that case studies are a useful research method for studying complex urban environments and for analyzing intricate, spatially based subjects and relationships. Case study methodology is also considered a flexible way to study a social phenomenon in its natural context (Yin, 2003). It allows the researcher to examine in detail how values are being shaped by history, culture, politics, ecology and society. Case study methodology, then, allows for a value laden comparative analysis between communities that supports the goal of my field research, which was to examine

in depth the water behaviors of women in two communities that typify specific categories of slum settlements in Delhi.

The Economic Survey of Delhi (2008) indicates that there are 10 settlement types in Delhi. These are indicated in Table 1. For the purpose of this research, I focused on a JJ cluster and a JJ resettlement colony. The bulk of Delhi's low- income population resides in JJ Clusters and Slum Designated Areas[10]. One of the communities where I chose to work, Kathputli Colony, is designated as a JJ Cluster settled in 1971. I chose to work in this type of settlement because these clusters house the second largest low-income population of Delhi, they are located in New Delhi, and their residents are regarded as 'squatters on private or public land' and as 'illegal occupants' (Banerji, 2005; Dhar, 2001).

To better understand if planning strategies in New Delhi improve the water access strategies of women from low-income neighborhoods of the city, the second community I selected- Savda Ghevra - is a JJ resettlement colony settled in 2006. These 'planned' colonies, as the name suggests, comprise JJ cluster households that have been resettled on government land (Banerji, 2005).

[10] The Slum Designated Areas, authorized under the Slum Areas Improvement and Clearance Act (1956), are predominantly in the 'walled city' or Old Delhi. These areas are considered 'legal' slums (Banerji, 2005). Even though these house the largest slum population of Delhi, their location in Old Delhi, and tenure did not address my main research question of how planning strategies in the city are affecting women's everyday interactions with water in New Delhi's low-income neighborhoods.

S.NO	Type of Settlement	Estimated population in lakh in 2000	% of total estimated population
1	JJ Clusters	20.72	14.8
2	Slum Designated Areas	26.64	19.1
3	Unauthorized Colonies	7.40	5.3
4	JJ Resettlement Colonies	17.76	12.7
5	Rural Villages	7.40	5.3
6	Regularized- Unauthorized Colonies	17.76	12.7
7	Urban Villages	8.88	6.4
8	Planned Colonies(Approved)	33.08	23.7
	Total	**139.64**	**100.00**

Table 1: Types of Settlement and Populations; Source: Economic Survey of Delhi 2008-2009

As indicated in Table 1 together, JJ clusters and JJ resettlement colonies house approximately 30 percent of Delhi's entire population. Both settlement types are recognized as residential communities eligible for access to public services, including water.[11] As mentioned earlier, while JJ clusters are considered 'unplanned growth', the JJ resettlement colonies are categorized as 'planned development'. Conducting research in these two communities also allowed me to compare water collection sources, everyday water access processes in the two communities, and the relationship between women and state agencies in a planned and an unplanned settlement of New Delhi.

I also chose to work in Kathputli and Savda Ghevra because, even though both these colonies are typical of JJ clusters and resettlement colonies respectively, they differ

[11] Kathputli is a 'notified' JJ cluster. This implies that Kathputli was recognized as a 'legal' slum settlement, rendering it eligible for access to public services. The last slum notification drive was in 1994 and people who migrated to Delhi post 1998 are not recognized as residents of any JJ cluster, including the notified colonies (Dupont, 2008).

significantly from each other in stage of development (one was established in 1971 and the other in 2006). They also differ in location within the city - Kathputli is in the east central part of New Delhi and Savda Ghevra is at the northwest periphery. These two case studies allow me to analyze the planning strategy of relocating inner-city slums to the periphery, and the implications of this for the women's ability to water access for daily use. These two types of slums have inherently different strategies because one is planned and new (Savda Ghevra), and the other older and unplanned (Kathputli). The planned settlement is expected to have access to 'official' sources of water, whereas the unplanned settlement relies on informal and 'illegal' water access strategies. By examining these two sites, I can evaluate how (if) formal water access in planned neighborhoods affects the burden of water collection for women. An intensive examination of these two cases allows for a focused (because it deals with a specific aspect of the cases) and structured (because it deals with specific question at both sites) analysis of these differences (Collier, 1983; George, 1979).

While the comparative case study approach allowed me to use multiple methods to address the question of whether socio-cultural and spatial inequities characterize the water management, distribution, and access systems in Delhi, one concern for this project, and for case study research in general, is that it can lack generalizability and validity. Stake (1995) argues that the purpose of case study research is its "particularization, not its generalization" (4) and I have, through this research, attempted to maximize my knowledge of both cases. However, for this project, the case study method is also employed as a way to examine how the current turn in planning and

governance in the water sector is *failing* in Delhi. Thus, echoing Flyvberg's (2006)[12] argument, the comparative case study method can become generalizable as it attempts to falsify certain existing theories or, in this case, strategies.

NOTE ON POSITIONALITY

> My first day seemed long. Longer than I ever thought a day could be. Most people [from Kathputli] were staring at me. I could hear the questions at the water point – 'who is she, why is she here, is she from the government, what is writing'. Those that weren't staring at me were ignoring me completely. As soon as the first person spoke to me, I distanced myself from the government and told them that I was a researcher from America. I don't know if that helped or increased the distance between us. Women, when they spoke to me after my 'declaration', tried to speak in English, giggling and laughing throughout. I look Indian, I speak Hindi, I am wearing Indian clothes and yet I struggled all day with my identity. Who am I here and, more importantly, who should I be here? (Field Journal, December 2009)

My motivation for this research needs to be viewed in light of my background and experiences. Potable water in Delhi became important to me when, three years ago, I contracted typhoid. All through my travels in India, I had been careful of where I drank water from even though I firmly believed in my 'I-belong-to-Delhi' immunity to water borne diseases, so the typhoid came as a shock. I had to take a semester off, and I spent 2 months on bed rest recovering from the disease. During this time, I began to question the quality of water being supplied in Delhi and the health consequences for people who are unable to filter water or take time off from work to recover from such diseases. I began to

[12] The subjectivity and arbitrariness attributed to the case study method is challenged by Geertz (1995), Flyvberg (2006) and Campbell (1975), who have reported that they changed their initial hypothesis and assumptions based on the case information obtained during field work. Flyvberg (2006) also argue that observation is the route to knowledge of how people live and interact, and this information cannot be replaced by quantitative knowing. Thus, for this project, where the aim is to gain context-dependent knowledge, a comparative case study method seems appropriate and valuable.

pay attention to articles and news pieces that connected the morbidity in Delhi to the available water quantity and quality. Thus, my interest in water related research began on an intensely personal note and continued on in the same manner.

Ethnographic fieldwork such as this can create a profound awareness of the researcher's own person, position, role, spaces and practices. During my fieldwork, as I built relationships with women at my research sites, I become deeply conscious of my gender and national identity. At different stages of my fieldwork I was aware of being an (Indian) woman, being a US graduate student, being from an affluent family, working in a poor urban neighborhood and living in a wealthy neighborhood of the city. I believe that this awareness of my roles and positionality in no way weakens my research, or renders my work self-serving; rather, it allows me to reflect on how I fit into the city's power structure at different scales, and how my presence in certain places influences the meanings and knowledge being produced in the communities, and in the city's planning and policy environment.

Abu-Lughod (1991) has argued that most studies of society are partial, and this simply implies that it is necessary to acknowledge that the ethnographic representations are "positioned truths" (142). My objectivity (because I make no claims to value neutrality) has been challenged repeatedly during this study. While my status as a "native" implied that I share the language and certain kinds of knowledges and experiences with the slum residents, it does not detract from the differences between my life in affluent New Delhi and the cultural patterns in the slums. I think acknowledging

the similarities, the differences, and the complex interactions between them remain an integral part of my work.

Peake and Trotz's (1999) argument that "acknowledging one's positionality… can entail abandoning the search for objectivity in favor of critical provisional analysis based on plurality of (temporally and spatially) situated voices and silences" captures my own view of my work. I accept that this work may be limited in objectivity, but I have attempted to situate my project in a way such that ethical, social, and cultural engagements are maintained. The consciousness of my background, gender, socio-economic class, and academic purpose have informed my methods, allowed me to locate myself in this research, and I hope, in the writing, such that I can develop and present a more nuanced understanding of the politics and processes related to water access, distribution and management in New Delhi.

RESEARCH METHODS

In this section, I will describe the research methods used to address the principal questions that guided my research.

Question 1: How does the water delivery system in Delhi function? What are the key factors influencing this system and the policies governing it?

To address this question, I examined the flow of water through the city – from the point when it enters the water treatment plant, flows out through the distribution mains, is accessed in slums, used, and then drained again. I gathered and analyzed state documents,

maps, and neighborhood descriptions of the selected sites (including information on number of taps, hand-pumps and other water sources at and near the sites, the working condition of the water sources and the distance from public piped water supply). I found most of this information through the local Delhi Jal Board (DJB) offices, the central secretariat[13] library and local NGO offices. I also analyzed policy statements on water resources, including Government of India Five Year Plans (1972, 1982, and 1987), National Water Policy (2010), Delhi Master Plan 2021, Delhi Urban Environment and Infrastructure Improvement Project (2001), and Delhi Water and Sewerage Supply Reform Project (2008), Tata Study on Rationalization of Patterns of Water Distribution in Delhi (2003), looking for specific language patterns and representational themes related to water distribution, supply and management.

I added to this official information with a community mapping and walk-through exercise. I asked residents to walk with me through their neighborhood, indicating water-related infrastructure, spaces of interactions, and other aspects of their community. During these 'walk-throughs', I recorded the working condition of water taps, hand-pumps, drains and other available water-related infrastructure in both neighborhoods.

In addition, I conducted 12 semi-structured interviews with senior and mid-level employees of state agencies. Bernard (1995) sees such interviews as being the most useful when talking to bureaucrats and managers because they allow certain flexibility in

[13] The central secretariat is a part of the central civil services of the Government of India. The central secretariat library, one of the oldest government libraries, dates back to 1891 and houses historic and current state documents.

the conversation while allowing the interviewer to work within selected themes. I spoke with politicians, officials, and technicians working in Delhi's water sector (including Delhi Jal Board (DJB), Municipal Corporation of Delhi (MCD), New Delhi Municipal Corporation (NDMC), Planning Department of Delhi, and the Ministry of Water Resources).

I conducted 5 semi-structured interviews with people working at lower level positions within DJB and MCD, including a zonal engineer, junior engineers, tube well operators (Kathputli) and fourth class workers. This allowed me to gather data at different scales from within state agencies involved in water relation decision-making. These conversations allowed for multiple points of entry into the policymaking process at local, state and national level. The interview transcripts have been coded and examined for specific themes and patterns.

Question 2: Is there an unequal distribution of water in New Delhi?

I examined this question at both macro (between Delhi and the slum sites) and micro (between the two slum sites) levels:

a). Between the city and the sites?

In an effort to determine the quantity and quality of water being supplied in Delhi and the time and money spent on potable water at the scale of the city, I examined the available secondary data from CURE (2007), Delhi Jal Board (2006, 2007), Hazards

Center (2008), and the Economic Survey of Delhi (2007, 2009). From the local offices of Hazard Center, CURE and Water Aid, I obtained studies examining the access to basic services in low income areas of New Delhi, including the Action India Delhi Baseline Report for Access to Services in Five Slums (2009), FORCE Baseline Report Access to Services in Two New Delhi Slums (2007), Gender Guidelines for Water and Sanitation (2009), Indcare Report on Water Quality in Delhi Slums, Status of Drinking Water Quality in Sub-Standard Settlements in Delhi, and Community Water Management Initiatives Report. I used these reports to better understand the access to potable water in low-income neighborhoods of New Delhi as documented by local NGOs. This allowed me to not only understand the current NGO led initiatives in New Delhi slums; it also provided me with demographic information and unofficial water access statistics for low-income neighborhoods in the city. Together, the analysis of NGO reports and of state documents provided a more holistic view of how water was being provided in the city, how much water was being supplied, and who had access to it. Comparing the information from private and sate-sanctioned documents also allowed me to better understand how New Delhi's water-related policies are being written and implemented.

b). Between the two sites?

In an effort to narrow my exploration of inequality in the water sector, I conducted a brief survey at both sites. Before the survey, I attempted to locate a list of all

residents at the two sites from the Delhi ration-card office[14] and Delhi Census Office. However, this list was limited because residents that moved into the settlements after 1998 were not included in Kathputli, and the official survey for Savda Ghevra is still being conducted. Officially, Kathputli has an estimated 2,700 housing units (though the number of families is approximately 5,000) and Savda Ghevra has 3,500 built units (8000 families). I surveyed approximately 100 residents at each site[15] (Bernard, 1995). I used convenience sampling, selecting respondents based on their availability and accessibility. However, the sample is also purposive (Tashakkori and Teddlie, 1998), as the respondents were selected based primarily on their roles as water collectors.

I asked four questions related to water access and distribution: a) Daily time spent collecting water; b) Volume (buckets) of water collected daily; c) Uses of water; and d) Money spent on water (Appendix 1). I conducted this survey in person at the community water supply source (the communal tap for Kathputli and points where the tanker stops in Savda Ghevra). In an attempt to gather more relevant information, I conducted the survey twice at each site – once at the beginning and once towards the end of my fieldwork. As women hurried to collect and carry water back to their homes, they had little time to think about and address my questions. The survey format did not allow me to build relationships with the women, and our conversations remained limited to four questions. The women were unable to share with me their difficulties in accessing water, which

[14] The Ration-card office issues ID cards to Indian citizens for obtaining subsidized food from government run shops. All adult members of a family can have this card.

[15] Based on Bernard (1995) estimation a good sample size at five percent confidence interval, from a universe of 3000 units are 340. At a ten percent confidence interval this number is 93.

seemed to further reduce their interest in the conversation. The second time I conducted the survey, towards the end of the fieldwork, even though more women answered my questions, they remained less interested in the survey because the format restricted them from being able to talk about their hardships (or innovations). The survey, however, did indicate the importance of building relationships with community members during such an ethnographic study. During interviews with women at both sites, I included the four survey questions and got better responses. When I asked the women about the discrepancies between the answers to the survey questions and the interview responses they indicated that the short survey format made them feel that they would not benefit in any way from our interaction, and they responded with whatever first came to their mind, rather than the most accurate answer.

In the summer of 2009, I worked with Hazard Center, a Delhi based NGO, to analyze results of water quality tests from hand pumps, taps and tankers across 24 slum settlements in Delhi, including the two sites identified for my project. The water at both entry and exit points of water treatment plants was also tested. The physical (pH, temperature and turbidity), chemical (fluoride, chloride, hardness, iron, phosphate, ammonia, nitrate and dissolved oxygen) and biological (Coliform bacteria and benthic diversity) characteristics of the water were examined. This testing was done for multiple reasons: first, it allowed me to analyze the difference between water quality in slums and the city; secondly, it clarified if there is difference between the water quality in resettlement colonies and established slum clusters; and finally, it allowed me to examine

the water-borne disease vulnerability at the two sites. Testing water quality thus provided primary data for assessing the consequences of unsafe and inadequate water for women.

The Hazards Center team used water quality testing kits developed by People's Science Institute in Dehradun, India. The water was collected before and during the monsoon seasons in 2009 (May and Septembers). I helped analyze the results for the water tests conducted by Hazards Center at 53 sites. I also conducted individual tests for biological contamination at my two sites using a mini water testing kit provided by Jal-TARA, New Delhi. I collected the water in a beaker, and added the provided re-agent to the samples. A change in the color of the sample 12 hours after adding the chemical solution indicates contamination. I conducted these tests in May and in September of 2010 at both Kathputli Colony and Savda Ghevra and compared the results with the more detailed tests conducted by the Hazards Center.

Question 3: What are the everyday strategies used by women to appropriate water in New Delhi?

In an effort to answer this question, I used a combination of direct observations, participant observations, focus groups, and semi-structured interviews.

Direct Observations

I began my ethnographic work by familiarizing myself with the two sites. During the first month of fieldwork, I gathered broad observations that helped me understand the

daily patterns of behavior, the physical environments of the two sites, and the interactions between residents. Michael de Certeau (1984) advocates that urban researchers should enter the everyday of life of the street. Jacobs (2008) emphasizes the importance of understanding the practical everyday order and of examining the gestures, routine and events at the site of the urban, in order to make practical sense of how things operate together and understand how human beings interact with 'things'. Direct observations allowed me to enter, view, and understand life at both research sites.

I spent three weeks at each location, 'hanging out' at, or near, the community water tap/tanker point. I also spent a part of each day walking in the two communities to familiarize myself with the physical layout of the space. During this time, I gathered rich observational details about the sites, the residents, their everyday practices, and their interactions with water. However, this did not come without challenges. At Kathputli, while entry into the site was easier because most people gathered at one place to collect water, residents had previously talked to many researchers about their water problems with no significant change in the situation and I was seen as just 'one more investigator'. Past experiences had left residents angry and dissatisfied, affecting their interaction with me. Only after I repeatedly traveled with them to the local DJB offices to speak to the local engineer on their behalf did they begin to share with me their stories.

In Savda Ghevra, meanwhile, people were busy settling into a new place, new routine and with new neighbors, and had less free time to speak with me. Also, because of their adjective resettlement experience, they were less wont to trust outsiders.

However, because I entered the site through the local NGO that was working on issues related to ID cards, food rations and transportation, the residents began to talk to me. The NGO representatives introduced me to people at the site, and because the NGO was somewhat trusted, that helped residents trust me. My continued presence in their neighborhood, especially during the harsh summer months when most outsiders would have avoided the community, added to their willingness to share their experiences with me. Once trust had been established, I began the next step of my research - participant observations.

Participant observations

Participant observations are defined as "getting close to people, and making them feel comfortable enough with your presence so that you can record information about their lives" (Bernard, 1975, 136). Bernard (1995) and Geertz (1975) identify five key reasons to employ this method for fieldwork: 1) It allows the researcher to collect different kinds of data, and allows for personal interactions with the community residents; 2) It reduces reactivity as people become more and more used to the presence of the researcher amongst them (the weeks spent engaged in direct observations are expected to add to this familiarity); 3) It allows the researcher to formulate reasonable, relevant and sensitive questions for future interviews; 4) The participant observer develops an intuitive knowledge about the everyday practices of a community and allows for a more accurate and rich description of the patterns and relationships on site; 5)

Through this method, the researcher can identify places and times where participants can be approached for further conversations.

Perhaps most importantly, participant observations have the potential to reveal contextualized, detailed information. Bernard (1995) has indicated that this method allows the researcher to report on more sensitive and 'hidden' information about the community. By gathering "local point of views by participating in the behavior from within and from without" (Geertz, 1975), I was better able to uncover the multiple realities and scales of the relationships between women and potable water. Currently there is a significant gap in the literature regarding how people in slum settlements cope with the lack of access to water (citations), and participant observations allowed me to contribute to this literature.

I spent approximately two months at each community as a participant observer in order to uncover and understand the themes and patterns of behavior associated with appropriating, storing, using and draining water. During this time, I would arrive at the site very early in the morning (usually the time when water is first collected) and stay through the day until the evening. I stood in the line for collecting water, helped link pipes to the main water source, helped women carry buckets of water to their homes, and poured collected water into the storage cans. I observed closely how residents collected water, how many times a day, how many women collected water at what times in the day, how the social networks at community water source function, and how women's behaviors change as they collect water. Essentially, my principal goal was to understand

how the interactions with water (waiting for it, appropriation, carrying buckets, storing, using, draining) affected the women's everyday social and behavioral patterns at the two sites. In addition, I also sought to understand residents' perceptions and responses to water-related policy making in New Delhi, and participant observations allowed me to document how certain policies met with resistance in urban poor neighborhoods.

I took three different kinds of notes during the period of direct and participant observations: methodological, descriptive and analytical (Bernard, 1995). I attempted to separate the three types of notes by recording them in different sections of my notebook. The *methodological notes* allowed me to record (and remember) the way I interacted with the slum residents. The *descriptive notes* capture the details of the behaviors and the environment at the site, while the *analytic notes* recorded my impressions and interpretations of these behaviors.

While knowing the language and being familiar with Delhi allowed me an easier entry into the field, my presence in both communities was fairly conspicuous. However, as Li (2008) had suggested, these feelings of being observed and being uncomfortable dissipated over a period of time. During the second half of fieldwork, as the residents got more used to my presence in their spaces, participant observations became both easier and more informative.

Focus Groups

I had the opportunity to work with CURE and JEET, two Delhi-based NGOs, to observe and analyze focus group data from 16 low-income communities across the city. These included both Kathputli Colony and Savda Ghevra. I participated in these focus groups primarily as an observer and helped in taking detailed notes. I also analyzed the raw data collected during the focus groups. My aim, in being a part of these groups, was to understand the different opinions and issues related to water that existed in both communities (and in the broader city), which in turn informed my subsequent interviews. Morgan (1996) and Crabtree et al (1993) have argued that focus groups in combination with in-depth interviews can be used to 'produce narratives that address the continuity of personal experiences over time' (Duncan and Morgan, 1994). Thus, using focus groups and interviews in combination add breadth and depth to the research project (Morgan, 1996). For example, I learned that, to meet their everyday needs, women store water for future use, find nearby free sources of water (other communities, construction sites, middle and upper middle class neighborhoods), access water at specific scheduled times during the day, and build small private facilities (hand pumps, bore-wells, private toilets). This helped me develop interview strategies and questions such as, 'what types of water sources do you use and who provides/builds/funds these water sources'. These questions were aimed at understanding the relationship between women and state agencies, and at exploring women's perceptions of state agencies in the two communities.

The focus groups were conducted in communities where CURE and JEET had been working for several years, and were led by two fieldworkers from CURE. The key challenge associated with the process was ensuring wide participation so that different socio-economic groups within the community were represented. Local community leaders were informed of the time, date and location of focus groups and they were put in charge of ensuring wide participation, and the fieldworkers attempted to ensure that community leaders were present at the meeting to address concerns regarding representation. Each focus group involved at least 10 to15 women and approximately 10 men. The participants were asked to talk about strategies used to collect water; times that water is available, current challenges, sanitation behaviors, and potential solutions.

Semi-structured interviews

I began conducting semi-structured interviews in February of 2010. During the observation stage, I had begun to identify women who were willing to speak with me in detail regarding the water situation in their community. I also asked these women to help me identify other residents I could speak with. In Kathputli, several residents were employed as fieldworkers with a local NGO, JEET. After learning about my work, JEET workers not only introduced me to other residents for my interviews, they also allowed me to participate in a series of focus groups being conducted on site to examine the water and sanitation issues faced by the residents. I spoke to 15 women in Kathputli and each interview lasted between three to five hours, and, in several cases, was spread over two or three days. The interviews were mostly conducted in the afternoons when the women

were resting after their morning chores of cooking, cleaning, and collecting water. In discussions with the respondents, we decided on a non-monetary compensation (clothes) for each interview. Identifying women respondents in Savda Ghevra proved more challenging due to the more sprawled and disjointed nature of the settlement. However, I managed to identify my key respondents with help from the local NGO, CURE. I spoke to 14 women in Savda Ghevra, with each interview lasting at least three hours. Most interviews were spread across two to three days and, in most cases, I conducted several follow up interviews over two months.

The main criterion for selecting the respondents was their willingness to talk with me; however, in Kathputli I also kept in mind their employment status. There is the assumption that women with employment have greater financial security and thus better water security, but employed women may also have less time to appropriate water. Because of this, I attempted to interview an equal number of working and stay-at-home women from each site. In Savda Ghevra, one key consideration was the year of resettlement. The first wave of resettlement happened in 2006 and the most recent resettlement was in 2010. I attempted to talk to women who moved to the community in each resettlement wave to better understand if the number of years at the resettlement community affected the women's water behaviors. Most women were not comfortable with recording the interviews, which resulted in my having to take notes that I later digitized and analyzed.

After the interviews, I began a second stage of participant observations, drawing on the information collected during interviews. For example, I had learned that the water collection point in Kathputli is busiest at 5AM and, thus, during my second round of participant observations, I would arrive at the site just before 5AM. At the end of the second participant observation period, I also conducted follow-up interviews with most of the initial respondents from the two sites.

The semi-structured interview format allowed me the freedom to keep the questions open-ended while still maintaining some direction. I used an interview guide with a list of topics to cover during the interview. I also developed a set of instructions to inform the interview process (for example, probe further if having daughters affects the level of domestic responsibilities, and thus affect the way women interact with water).

There were several challenges associated with the semi-structured interviews. Due to safety concerns, I was advised by residents to leave the neighborhoods by early evening. This resulted in limited access to men who were working. Many women were also uncomfortable talking with me in the presence of male family members, which made it difficult to observe the interactions between men and women within the households. My interactions with the women at the water collection point and at various other community-gathering places afforded insights into how they collected, used, and managed water, which provided rich information needed to address my key research questions.

Question 4: What are the social, economic and health consequences for women resulting from this everyday struggle to appropriate water?

This question is addressed through the information collected from participant observations and semi-structured interviews with women from the two communities. During the interviews, I specifically asked questions regarding the *social* (relationship with other residents, position in community, position in household, education for children), the *economic* (ability to work, opportunity cost), the *spatial* (choice of housing, place of employment), and the *physical* (water-related diseases) consequences related to water insecurity.

I also interviewed workers from local clinics and from NGOs running health camps in (or near) the two communities. In Kathputli, I spoke to workers from Kalakaar Health Trust and Lal Bahadur Shastri hospital (locally knows as the *pahari wala* hospital). There are no health care facilities near Savda Ghevra, but I did speak with the employees at a local dispensary. The aim of these interviews was to approximate the number of people who test positive for water-borne diseases and infections annually, and estimate the disease vulnerability at both sites. Because of the sheer volume of patients, finding empirical data specific to the two sites was difficult; however, each interviewee attempted to speak to the water-related health vulnerabilities for the general population in the area. The information available for Kathputli Colony was far more detailed than for Savda Ghevra, primarily because Savda is a fairly new community and because, currently, there are no public health care facilities in the area. Most residents of Savda

Ghevra continue to visit the hospitals near their old neighborhoods. The information gathered in this step added to the health-related information shared by the residents during earlier interviews. In addition, I collected city wide water-borne disease and infection data from the National Institute of Communicable Diseases (NICD) to compare with the approximate site-specific data. This analysis, when viewed together with what the women say about their health, provides a relatively comprehensive view of the health consequences of the insufficient quantity and quality of water in urban poor neighborhoods of Delhi.

Question 5: What are the everyday practices of state and city officials and technicians in the water sector and how do they differ from the policies governing the system?

In order to address this question, and also to develop a comprehensive understanding of the water access, management and delivery system in Delhi, it was imperative for me to understand the water policy environment of the city and to identify and interview the key players in Delhi's water politics and policy processes. I began to address this question through a detailed analysis of the water related policies in the city's master plan and urban development reports. I also reviewed various studies commissioned by DJB and Delhi Development Authority (DDA) on issues related to water. Through this initial investigation, I identified people for detailed interviews and developed a topic guide that included questions on how policies are written and implemented, and more nuanced questions on how policies are perceived and negotiated within public institutions. However, to actually conduct these interviews proved

exceptionally challenging, in part because during my attempt to build relationships with people from the community, I had spoken to several local engineers and other government officials on their behalf and the local city employees soon viewed me as a biased 'NGO person'.

In order to better understand the perspective of state officials, I spent over three weeks working with a DJB executive engineer on a report that examined the impact of new technology on water distribution. The report was extremely useful for my research as I attempted to document the technological innovations in Delhi's water sector. The DJB engineer I collaborated with also introduced me to most of the key informants for my project. I interviewed several DJB and MCD tanker drivers, junior engineers, zonal engineers, and executive engineers to understand the technical aspects of water policy implementation. I also spoke with engineers housed in the planning and mapping department of DJB, and I interviewed the elected MCD counselors and local political leaders from both Kathputli and Savda Ghevra area.

These semi-structured interviews allowed me to understand the differences between how policies are written, perceived and implemented at different levels within public institutions. It also allowed me to identify gaps between what is considered 'legal' by city officials and technicians and the residents from the two communities. I had embarked on this project skeptical and critical of the water policies and the policy-making processes of Delhi. However, in time, as I conducted my interviews and gained a better understanding of the complex water policy and management environment in New

Delhi, I came to understand that many technicians and city officials were also critical of these policies, and that they often worked around and in spite of certain rules and conditions. This made my interactions relevant for analyzing the current and future policy environment of the city, and for suggesting water policy recommendations based on my research and analysis.

Question 6: What lessons can be drawn by these everyday strategies employed by slum dwellers to improve access and expand delivery options for urban water systems in Delhi?

I approached this question from three points of entry. I looked at global examples of creative responses from community groups to increase water security in urban poor neighborhoods. During this literature review, I focused on the role of women and non-governmental organizations (NGO's) in such initiatives. The aim of this review was to identify the solutions that emerge from the ground up and that can be translated into policy.

Secondly, during fieldwork, I developed a comprehensive list of water-related NGO's that work in (or near) the two research sites. I also volunteered as a writer and as a research consultant with several NGOs, including CURE, JEET, and Hazards Center. This work was critical for developing my understanding of how NGOs function and for identifying key respondents for semi-structured interviews within the NGO community. I

spoke with approximately 10 people from the NGO community in Delhi, including fieldworkers, analysts, researchers and directors.

Most NGO projects are evaluated periodically by the funding agencies (World Bank, Asian Development Bank, UNICEF, WHO, government agencies, including the Planning Department and DJB). These evaluations include information on goals, target communities, motivations, and methods used for the projects. These reports also detail the successes, failures and challenges faced during projects. As a third step in this analysis, I analyzed DJB and Water and Sanitation Program reports that profiled NGO-run projects in Delhi. This step was useful in identifying the challenges for slum communities as they attempt to access potable water in Delhi, and in analyzing some innovative grassroots solutions that are emerging in the city.

My data comprises both primary and secondary sources. They range from my own field notes to government documents, NGO reports, interview transcripts, focus group transcripts and numerical data. The process of data analysis has been one of triangulating these sources to create and substantiate the main arguments for this project. I have attempted to interpretively thread together events and experiences during the data collection and analysis process. This process was fraught with challenges, as I traveled in and out of roles and contexts, moving within and around relationships – state, local; rich, poor; formal, informal; legal, illegal; Indian, western; male, female. Thus, my changing identification with and alienation from respondents within communities, public institutions and NGOs caused my role to constantly evolve. Respondents were

simultaneously curious about me and wary of me, and I constantly tried to strike a balance between respecting conflicting values and roles. This process continues even though I am no longer in the field.

WHO COMES BACK FROM AMERICA?

> Today was my last day in the field. The time seemed to have flown by. All my friends came to meet me at Neema's house. We had a party. There were so many questions – will you come back, when will we get water, will we get water, can you take us with you, will you talk to my son before you go. Neema said, "Who comes back from America! You know she won't." I was another person who was leaving. I felt that I added to the temporariness that these women encounter on a daily basis. I am not sure what my role was supposed to be here. I am not just a researcher or just an activist or just their friend. I feel as if I am leaving before I could completely define my role, and I think, despite their generous cooperation in my work, these women could not define my role in their lives either (Field Journal, September, 2010).

The last day in Kathputli, my friends told me that they doubted that I would ever come back. Even as I promised them I would, I dealt with the guilt of leaving, the frustration of not solving their problems, and the fear of not being remembered when (if) I came back. I felt that I was leaving behind incomplete work, unmet expectations, and friends who would remain central to my writing process, even as I became peripheral, and maybe forgotten, in their lives. One central challenge and goal for my work is to make it relevant to those who are not simply respondents and informants, but who are in fact partners in this project.

CHAPTER II

A Feminist and Socio-Political Critique of International Urban Planning

Early mornings in Kathputli and Savda Ghevra are always the busiest times of the day. The women of Kathputli colony rush to collect water, finish chores such as cooking and cleaning, and get to work; in Savda Ghevra, women start their day by lining up outside the *ration* store for food and cooking oil, and by waiting for the water tanker to show up. In both communities, women work hard every day to gather basic necessities, such as food and water, to run their households. Their continuous search for everyday resources, including 'natural resources,' and the insecurity of access indicates a fundamental failure of planning in cities such as New Delhi. Even though it has been repeatedly argued that gender perspectives are necessary to address urban poverty, interactions between gender and urban 'nature' (water) are missing from urban planning projects in Third World cities.

Traditionally, planning has attempted to *make* Third World cities fit Euro-American standards of the urban (Robinson, 2002). In this way, international planning can be defined as a branch of planning that attempts to study (and fix) the problems in (and of) Third World cities. However, problematic criteria in determining whether to classify specific spaces as 'third-world', 'urban', and 'modern' limits the imagining and planning of Third World cities. I argue that in this planning framework, the good city

form and function emerging from the West has become the benchmark for Third World cities (Roy, 2009, Robinson, 2002), which implies that planning is complicit in creating dualisms such as developed/ underdeveloped and modern/ unmodern.

However, while many scholars, including Roy (2009, 2010, 2011), Rao (2008), Yiftachel (2009), and Pereira (2009), critically examine traditional planning models in order to define a new international planning theory and practice that is more attuned to situated political economies and cultural contexts, gender and urban nature remain missing from this analysis. From the perspective of nature, Swyngedouw, Kaika, and other urban political ecologists have argued that planning and policies do not engage with the social and political (re)production of urban nature.

Drawing on these critical perspectives on gender, urban nature and planning, I argue that, even though the critical international planning literature has begun to focus on context and place-based theories of planning, it is still lacking a thorough engagement with the relationship between gender and environment, and the relationship between cities and nature. In this chapter, I attempt to address these gaps by drawing on literature from gender and development studies, feminist political ecology, and urban political ecology. I have, during the course of my research, begun to rethink the field of international planning, and the following is my attempt to highlight how, when viewed through a gendered urban political ecology lens, international planning can begin to comprehensively and contextually reimagine Third World cities, such as New Delhi.

REVIEWING INTERNATIONAL PLANNING LITERATURE

Feminists, post-colonial writers and Marxists critique the universalizing approach of planning (Bridge and Watson, 2000) and argue that urban theory and planning theory are based on western experiences and intellectual traditions (Roy, 2007; Chakrabarty, 2000). Instead, Rao (2006) argues that all urban locations of the world are connected through the "dialectic of decline and return which runs through modernity" (228). Thus, all urban regions of the world, including the Third World cities, can be located within the "spatialized history of modernization" (Rao, 2006: 228). However, international planning studies and projects are rooted in narrow definitions of the urban and the modern, and Western-based planning attempts to solve the 'problem' of Third World cities that are seen as 'un-urban' (Gandy, 2008) and as 'failed spaces of modernity' (Gupta, 1998), largely due to their lack of effective governance, service provision and economic productivity.

However, researchers and professionals who practice outside the 'west' complain that these Western perspectives on the urban and the modern are restrictive and frequently irrelevant to their work in cities such Calcutta, Douala, and Jakarta (see e.g. Roy, 2007, Simone, 2004; Rao, 2006; Robinson, 2002; Dick and Rimmer, 1998). Roy (2007) argues that the 'asymmetric ignorance' of western intellectual tradition in viewing Third World cities as problems has to be overcome in order to create urban theories and planning that befit these regions (2). She suggests moving the center of theoretical production to the Third World cities, such that planning theories are produced 'in place' (Roy, 2001) and remain context specific (Fainstein, 2005). If Third World cities are

continued to be seen as problems and considered weak or failed modern spaces, the "constant *political struggle* and *production of space* in these regions will be ignored" (Roy, 2007: 2, emphasis mine). Thus, the paucity in theorizing about cities in the Global South hampers the ability of researchers to explore questions of who produces what space as a result of what processes; how identities, such as gender are produced; and how nature is produced.

Beauregard (1990) finds that more and more planning theorists create abstract ideas and processes that are divorced from the social, political and economic conditions in a city. Prescriptive and universalized normative criteria dominate both planning theory and practice. Planning in Third World cities, in its attempt to establish order based on Euro-American norms, has contributed to a process of fragmentation where some spaces are excluded from the 'planned' city. Williams (1995) argues that there can be no standardization of plans, and imagining that "large swaths of territory can be divided into units of 'third world' or 'developing world' is simplistic" (14). Ultimately, I argue, Third World cities survive *despite*, not *because* of, these non-contextual, Western-inspired plans.

Cities in the Global South are seen as disconnected from their historical ties to the world economy and as "structurally irrelevant" (Robinson, 2002: 536). Instead, they are considered centers of high demographic growth and low economic growth (Sassen, 2001), referred to as big, but not powerful (Robinson, 2002), as planet of slums (Davis, 2006), or as gigantic concentrations of poverty (Rao, 2006). However, these positionings

are decided based merely on economic and demographic factors, and I argue, the position of a city in the global economy cannot be examined without looking at its political, social, cultural and historical legacies and processes. Thus, any planning scheme divorced from these processes and legacies will not be able to respond to the particular issues of a region, and will remain restricted to traditional, Western-derived discourses of development.

Recently, critical theorists working in the field of planning have challenged the perpetuation of standards imported from developed countries (Ben-Joseph, 2004) or carried forward from the colonial past (Roy, 2007). Planning from this critical perspective, then, can be seen as a 'colonial practice' because of its shortsightedness, (Gupta, 1998, Gandy, 2008). Instead, the field of planning has to acknowledge the histories, geographies of inequity, injustice and division in third world, and then contextually address the specific issues of Third World (postcolonial) cities.

Gupta (1998) argues that after independence, colonial strategies and patterns of growth were often packaged as development and these became the foundation for planning schemes within these post-colonial societies. The citizen of a post-colonial nation-state became a subject to the new (post-colonial) ideas of development and to the newly formed nation-state. The knowledge of this citizen-subject was termed as indigenous when compared to western knowledge, and s/he was looked upon as a "failed subject of modernity" (Gupta, 1998: 232). Thus, planners and policy makers, accepting

post-colonial ideas as development, repackaged and inserted the old language of colonial inequity into new planning schemes.

This inability of planning to understand or address the urbanization in Third World cities is exemplified by the paradox of Mumbai, India. In Mumbai, "the slums are seen as both critical to the city's economy, and inextricably linked to the massive failures in planning and policy" (Rao, 2006: 230). In this way, cities in the Global South emerge as the global 'other' or as 'irregular' (Escobar, 1995), placed outside the categories of modern and developed that continue to be based on Euro-American planning traditions. This indicates a temporal (colonial v. post-colonial times) and ideological (indigenous v. modern) break between the lived reality of Third World cities and the discourse and knowledge production of Western-based planning.

Escobar (1995) argues that for development to occur, irregular categories, such as illiterate and underdeveloped, have to be constructed. In so doing, these 'abnormalities' are normalized and the process of treating and reforming them can begin. I argue that the modern city is constructed in a similar manner. Jameson (2002) has suggested that most Global South nation-states are "modern in every conceivable manner" (8), but the concept of modernity, as with development, remains embedded in the West. Jameson (2002) also argues that economic development is often seen as the only criterion for adjudging places as modern, and in this way, Global South countries remain unmodern. The modern, then, emerges as deeply linked with the development discourse. Instead of recognizing multiple modernities (Gupta, 1998) or alternate modernities (Appadurai,

1996), the focus the Global South remains on finding the right kind of modernity. Thus, countries of the Global South have to be modernized, but this modernization has come to mean the adoption of the 'right' ideas, values, and development goals that are currently embodied by the countries of the West.

Rieker and Ali (2008) challenge this Euro American thinking and suggest that the megacities of the Global South now define our understanding of contemporary urban landscapes. However, I argue that our understanding of the modern urban spaces remains deeply rooted in developed cities. This is corroborated by Gupta's (1998) analysis that the current strategy for development can be seen as mimicry, where Global South countries are attempting to meet certain quantitative standards often seen in annual World Bank reports, such as controlled growth rates, decreasing rate of poverty and focus on market reforms (40). In this way, cities in the Global South become subject spaces. The political and planning institutions of these cities contribute to their othering and towards perpetuating the mimicry in development.

The process of mimicry encouraged in planning contributes further to what Escobar (1995) calls the depoliticization of the processes of modernization of cities. The everyday problems in these cities are made technical: for example, unemployment is seen simply as a lack of education or a lack of familiarity with markets. These technical problems are then addressed using technical planning solutions, and the social, political and value-laden nature of planning is rendered neutral. Planning, in this way, becomes the process through which certain types of knowledges, usually emerging from the West,

are privileged, and any conflicts, debates and alternatives are hidden by the seemingly rational and scientific analysis and decision-making processes.

However, Simone (2004) argues that in African cities any discrete definitions of modern and traditional become impossible. African (and other Global South) cities emerge as spaces where new civic, social and political institutions exist alongside traditional organizations, and both global and local flows of capital, knowledge and spaces are produced. These cities become simultaneously modern and unmodern, developed and underdeveloped, and planned and unplanned. The rationality of planning, in attempting to recreate developed cities in the Global South, succeeds only in concretizing informality and producing spaces and populations that are to be tolerated, criminalized, condemned or improved. The countries of the South become the global underdeveloped (or the more polite, developing) while also claiming the promise of modernity that comes with being independent nation-states. Their cities too, through modern political institutions, such as planning agencies, undergo a similar colonization that produces marginalized spaces and subjects. Thus, even as Third World cities attempt to claim the promise of the 'right' modernity, an underbelly is created.

Chakrabarty (2000), in his persuasive work on postcolonial thought and history, argues that in European colonial thought, (political) modernity became a stagist concept, which allowed certain people to be more modern than others. This concept implies that modernity becomes available to people in stages. As the nationalist movement began to challenge this stagist modernity, residents of colonial nations became simultaneously

modern and unmodern. Loosely based on Chakrabarty's analysis and the current West-based understanding of modern, I argue that in Third World cities, the urban poor emerge are *both* modern (as a citizen of a nation-state) *and* unmodern (due to lack of education, residence in slums, and lack of access to basic resources such as water). Thus, there exists a tense nexus between modern/unmodern and poverty[16] in Third World cities that remains central to the current development paradigm.

The slum becomes the symbol of the poverty-development nexus in the Global South city, the space where economic entrepreneurship (modern) and desperate poverty (un-modern) go hand in hand. Roy (2011) argues that slums are "the most common itinerary through which Third World cities are recognized" (225).[17] Gandy (2005) adds that in this worlding of Global South (Spivak 1999), cities such as Lagos and Mumbai are placed outside world history. In a critique of Koolhaas (2000), Gandy argues that in viewing the modern urbanism of Lagos (or Jakarta, Dhaka, Delhi, etc.) as one that is thriving, the only focus is on economics, or more specifically, the ability of the city to sustain a global market. Roy (2011) goes on to argue that slums represent "a crucial space

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[16] Roy (1996) defines poverty as a "loss of endowments and of entitlements, where endowments are capital assets and entitlement is the legal claims an individual group can make on resources" (74). I borrow this definition and her critique of the focus on importance of social networks in the urban informal sectors in the Global South. As with her example of kin networks dissolving in the face of crisis, my findings indicate that the violence and crises in water access processes causes ruptures in the social networks of women from low-income communities. Thus, borrowing Roy's definition of poverty, I argue that connections between poverty and gender constructions become visible in the daily making and remaking of women's water claims. Through their interactions with water access processes, women subversively challenge 'legal entitlements' to resources, while also passively allowing access to remains differentiated based on gender, caste, class and other socio-political factors.

[17] Roy (2011) refers to the 'slum tours' offered in cities such as Rio de Janeiro, Mumbai and Jakarta. She argues Third World cities are being "worlded through the icon of the slum" (225).

for bottom-billion capitalism, one where populations can be easily rendered visible for global capital" (229).

Through the depoliticizing narrative of development, slums in the Global South are cited as a consequence of overpopulation (De Wit, 1992; Tipple and Speak, 2003). Thus, slums are identified only as a consequence of a larger phenomenon (overpopulation), rather than as a place within the city. Essentially, this places slums outside public policy. Slum dwellers then become a part of the problem and can be seen as encroachers on public land. This leads to a very insidious politics of exclusion in the Global South city, through which slums and slum dwellers are constructed as phenomena located outside the realm of the urban, modern space.

While on a global level, slums are being depoliticized and de-historicized (Gandy, 2005); planning and policy networks in Third World cities simultaneously deinstitutionalize these spaces and their residents through constructions of illegality and temporariness. By creating and perpetuating such normalized categories of spaces and of residents, planning allows the inequality in access to become an accepted part of the governance in the city. Thus, defining slums as problems of overpopulation or as ingenious, critical, alternative systems (Koolhaas, 2000) becomes a campaign to impose a new colonial imagining on Third World cities, a de-historization of certain urban spaces, and a depoliticizing of poverty on a global and local scale, such that the implications of the current development paradigm on these spaces are rendered invisible. The tense nexus between poverty and modernization at the global and the local scale is neutralized

and the question surrounding urban development in Third World cities becomes one of conditions (such as poverty and overpopulation) rather a question of politics of poverty, history, and planning.

Ultimately, planning needs to examine its own position within the Global South to move beyond the limitations imposed by its Euro-American heritage. The definition of global and international needs to be reevaluated in order to include politics of identity, networks (social, political and economic – both historical and forced), and notions of (post) colonialism, hegemony, markets and ecological connections. Instead of merely aiming to make differences (and people) governable, planning needs to allow differences to become central to its processes. Unfortunately, the inability of international planning to respond to how differences are produced, managed and perpetuated at global, national, regional and local scales has been vividly exemplified through the marginalizing social construction and treatment of women.

FEMINIST PERSPECTIVES ON INTERNATIONAL PLANNING

Across different feminist schools of thought, scholars have argued that socio-economic and political processes that construct gender identities have to be a critical part of development projects. In the 1940's, a development perspective espousing Marxist ideas and derived from Enlightenment thought began to gain momentum. Development was seen as a fairly linear and logical process. The attempt was to bring the backward, underdeveloped regions to 'full development,' which was equated with the current state of Western countries (Marchand and Parpart, 1995; Pearson and Jackson, 1998). In the

1970s and 1980s, this perspective was harshly critiqued as being too linear, and planning projects were criticized for silencing the 'woman question' in development (Bhavnani, et al., 2003). Boserup's (1970) seminal work argued that "women were excluded from and invisible in development" and that development and planning projects, instead of positively affecting the lives of women, often resulted in detrimentally influencing their economic and social status. From this critique, the Women in Development (WID) approach began to emerge.

The proponent of the WID approach argued for equality between men and women. Development, with its continual disregard for women's resources and participation in the economy, was seen as inefficient (Bhavnani, et al., 2003). However, the theoretical inspiration for WID primarily emerged in the West and was not necessarily relevant to developing countries. The WID approach assumed that the act of simply participating in development projects would empower women (Green, Joekes and Leach, 1998), thus homogenizing and essentializing the category of woman and of empowerment. Women's development in all projects was considered a logistical problem, not one that required rethinking gender stereotypes, differences and development ideologies (Mohanty, 1988; Marchand and Parpart, 1995; Tinker, 1990; Pearson and Jackson, 1998). In the 1980's, Marxist-feminists began to question why development was not focusing on transforming the dependence of the Third World on the richer countries, and what the implications of this were towards silencing the 'woman question' (Mohanty, 1988). From this critique, the Gender and Development (GAD) approach, which became influential in both feminism and planning, began to emerge.

The GAD approach distances itself from the category of woman and begins to focus on gender. Gender, here, can be understood as a "social and cultural construction that organizes and gives meaning to our bodies, practices, relationships and world views" (Paulson, 2004: 8). Gendering is also understood as the process by which male and female biological bodies become the social categories of men and women. Development, seen from the perspective of GAD, is understood as "social and economic change over time as well as the development of human capital" (Pearson and Jackson, 1998, p14). Thus, while GAD advocates attempt to integrate women into development (borrowing from the WID tradition), they also want to locate and operationalize development projects that transform the social construction of gender relations in order to create equity and to empower women.

The strength of the GAD approach is that it not only problematizes the concept of woman, but also focuses on the subordination of women within gender relations and the inherent patriarchy of state and development projects (Elson, 1995). This allows scholars to examine macro issues involving gender relations, such as the gendered dimensions of environmental degradation and economic planning. Thus, the GAD perspectives speak directly to the debate within feminism that "male and female categories do not have universal meanings" (Roy, 2001: 118).

However, even as the GAD perspective allows for the production of a discursive space in which the goal of development and social construction of identity can be challenged (Green, Joekes and Leach, 1995), it seldom challenges ideas of development,

modernization and western intellectual traditions. Women in GAD narratives appear as both heroic and victimized (Cornwall, et al., 2007). Parpart (1995) argues that GAD literature continues to represent Third World women as "benighted, overburdened beasts, helplessly entangled in the tentacles of regressive Third World patriarchy…the poor Third World woman remains an "other" to her development expert sisters" (in Crush, 1995 p254). The questions regarding the differences *within* the category of women remained unanswered and instead, all Third World women are seen as 'poor and disenfranchised' (Parpart, 1995). In this way, the GAD approach essentializes third world women even as it moves away from standardizing 'women'.

Ultimately, the GAD approach is unable to address the multiple publics and reevaluate the structure of gender relations in their own society. Most importantly, this approach fails to examine how the social, historical, political (and urban) processes that lead to the construction of gender in the Third World cities shape international planning projects and ultimately serve to perpetuate unequal gender relations. Feminist political ecology and urban political ecology, I would argue, begin to address this gap, allowing us to better understand how the production of gender (and gendered inequities) is a significant part of urban socio-nature.

FEMINIST PERSPECTIVES OF/IN URBAN POLITICAL ECOLOGY

Dianne Rocheleau (1996), one of the more prominent proponents of the field of feminist political ecology, argues that the relationships between women and ecology are fundamentally political. She expands the argument of feminist environmentalists and

GAD proponents, suggesting that political constructions and normalized relations provide women and men with distinct rights and responsibilities in terms of production, access and control of natural resources. The domain of women, in terms of production, is considered the subsistence realm, in contrast to the commercial sector, which is considered the male realm. Women are restricted to private spaces and households, while men are allowed to function in public spaces and in work/labor related spheres. Brown (1995) argues that even within the home, women's spaces (kitchen) are subordinate to those of the man's (den, living room).

Women's rights to environment are situated within and subservient to those of men, and thus controlled by male-centric plans and rules. For example, women are held responsible for procuring and maintaining resources (such as water), even though men control the extraction rights and land ownership. This further suggests that the women tend to become visible in certain places, and remain invisible in others. Ultimately, women develop contentious relationships with planning as they appropriate legal and illegal access to environmental resources. The feminist political ecologists believe that these inequalities and contestations stem from an unequal distribution of rights and agency (Agarwal, 1992), and I argue that planning needs to acknowledge and address these inequalities.

Feminist political ecology and other alternate GAD approaches (such as feminist environmentalism; Agarwal, 1992) emerged in large part from the field of political ecology (Leach, 2007; Rocheleau, 1996). Because of this intellectual heritage within

political ecology, these approaches seek to examine human agency in terms of the opportunities and constraints that shape the human (gender)-ecology relationships (Pete and Watts, 1996; Blakie, 1987). Feminist political ecology examines "the interconnectedness of all life and the relevance of power relations, including gender relations in decision-making about the environment" (Rocheleau, et al., 1996). These roots in political ecology also provide feminist approaches with a definite geographic bent, including "using a territorial notion of justice to examine the distribution of benefits" (Smith, 2000, p 3) and the 'structural explanations of unequal power relations' (Harvey, 1996; Smith, 2000, p3). Thus, feminist political ecology recognizes that historical, political and cultural processes produce socio-nature (and the gendered relationships within this), and recognizes that in the production of socio-nature, injustices are also produced.

Drawing on these insights from the field of political ecology, development scholars working within urban environments have begun considering the social processes that produce urban natures and its attendant injustices (Swyngedouw, 2003), giving rise to the subfield of urban political ecology. Urban political ecology is characterized, in part, by its "critical disposition" (Keil, 2003). Keil (2003) defines critical as the "linking of specific analysis of urban environmental problems to larger socio-ecological solutions" (p 724). The urban (developed and densely populated cities) has historically been considered the opposite of the 'natural' (pristine, untouched nature) (Harvey, 1996). Urban ecology and urban political ecology recognize cities as being hubs of complex relationships between society and ecology. Swyngedouw and Heynen (2003) articulate

this relationship by emphasizing that cities are "essentially created from natural resources through socially mediated ecological processes" (p 908).

Urban political ecology is premised on the assumption of a dialectic relationship between nature and society, based on in part on Lefebvre's (1991, 1984) argument that the "urban has become the historic-spatial site of capitalism". Swyngedouw (2003) furthers this discussion of the urban to implicate nature as an integral part of this space. He argues, "both society and nature are produced and hence are malleable and transformable" (95). He clarifies that society and nature cannot be separated, but exist as interwoven through the constantly changing societal and natural processes of production and consumption (Swyngedouw, 2003; Swyngedouw and Heynen, 2003).

By incorporating this dialectic perspective on the 'production of socio-nature,' urban political ecology thus moves beyond a mutual cause and effect relationship between politics, economics and ecology. Urban political ecology conceives of the social and physical environment of the city as a result of the production of urban nature and of the urbanization of nature (Swyngedouw and Kaika, 2000; Zimmerer and Bassett, 2003). Hence, the way nature (and gender relations) are produced, controlled and manipulated, politically, economically, and socially, reflect the power structures in place in the city. Nature is never untouched, rather it is produced and reproduced in human society. Castree (2001) clarifies this idea of 'produced nature' thus:

> Nature has never been simply 'natural' – whether it's 'wilderness,' resources, 'natural hazards,' or even the human body. Rather, it is *intrinsically* social, in different ways, at different levels, and with a multitude of serious

> implications. The all-too-common habit of talking of nature 'in itself,' as a domain which is by definition nonsocial and unchanging, can lead not only to confusion but also the perpetuation of power and inequality in the wider world" (p. 1)

The urban predicates the production of urban nature and of complex socio-ecological relationships, through which "modern life is produced in both a material and a cultural sense" (Swyngedouw and Heynen, 2003). This simultaneous production of urban nature and of modern[18] life also lays the foundation for patchy geographic development in the city, such that uneven and spatially differentiated socio-ecologic landscapes are produced (Swyngedouw and Kaika, 2000). Those with greater power are able to manipulate processes and produce landscapes that perpetuate their position of power. This implies that poor/marginalized regions in a city are often detrimentally affected by negative environmental changes, as opposed to the more prosperous parts of that may not be similarly affected by the same changes. Examining urban landscapes, then, involves rethinking what is local and global, and how they are produced and transformed, while also altering the existing political, economic, social and ecological power structures. This local-global focus raises critical questions: how are local cultures and spaces modified along global ideas, how are local actors and environments modified when their socio-ecological framework shifts and socio-spatial relationships are transformed?

However, as urban political ecology begins to address these questions, it needs to include the feminist perspective on the politics and social constructions of nature in order

[18] The definition of modern, here, remains based on Euro-American standards (Roy, 2007; Gupta, 1998).

to create a new planning agenda. Urban political ecology also derives some of its multiple roots from eco-feminism (Kiel, 2003). Thus, gender, and its production, should be included as an integral element within urban political ecology's research agenda of examining the constant flux of societal and natural processes of production and consumption.

Ultimately, by drawing on the critical perspectives from feminist and urban political ecology, planning scholarship and practice are better positioned to approach third world women as the subjects, rather than the objects of planning. Planning, then, should examine the different situated knowledges, lived experiences and perspectives in the city (Parpart, 1995; Roy, 2007), and "listen to the voice of the subaltern" (Spivak, 1990), which provides a better understanding of the processes that produce gendered socio-natures, and what the implications of these productions are for planning in and of the city. The key (and political) agenda of such a feminist-inspired planning practice would be to imagine "a more inclusive, if fragmented city, based not only on a different ordering of rights, but upon different political-economic practices" (Harvey, 2003, p 941) and, I would add, social-ecological practices.

REDEFINING INTERNATIONAL PLANNING

Such a redefined international planning theory, then, should draw on multiple roots of the intellectual traditions of development, gender and development studies, feminist political ecology and urban political ecology. Simone (2004) challenges the stereotypical Euro-American planning and suggests that, for planning and development to

be relevant in Third World cities, it has to emerge from the networks and informal practices that sustain city life. Roy (2007) calls for shifting labels such as 'underdeveloped' and 'third world' and moving beyond the current short sightedness in international planning. Roy (2007) stresses that Third World cities are neither irrelevant (Sassen, 2001) nor powerless (Robinson, 2002). While I agree with Roy's argument, I argue that Third World cities are different and, for planning to remain relevant in the context of these cities, its theory and practice have to be rethought.

The GAD approach, meanwhile, emphasizes that categories such as cities, woman and development are not homogenous. The GAD literature indicates that planning projects should approach third world women (and cities) in a manner different from western women (and cities). Feminist political ecology further develops these ideas and suggests that gender includes multiple publics and is a political and social category. Feminist political ecologists argue that the environmental movement inadequately deals with gender-ecology relations. They examine political, social, cultural and economic institutions, issues of rights, justice, and resource distribution, access and use through a gendered lens. Feminist political ecology literature challenges planning to understand and respond to gendered knowledges as 'sites of resistances and power' (Crush, 1995, p 20).

Next, urban political ecology issues the toughest challenge to both planning practice and theory. Its political program is defined as a means to enhance socio-ecological justice in urban regions, such that the environmental production and consumption process is made more inclusive. The aim is to create social change.

However, this understanding of equity, I argue, has to include differences not only based on class, but also gender, religion, and region. Urban political ecology emphasizes a move from government to governance, and for greater civil society influence on planning and policy (Douglass and Freidman, 1998). Since the political agenda intersects the positivist realm of planning and policymaking, urban political ecology attempts to find broad socio-ecological solutions to specific urban ecological problems. Thus, planning's narrow vision that problem solving is simply policy-oriented, is summarily rejected. Urban political ecology literature is very critical of the role played by planners and policy makers in urban socio-ecological issues. Gandy (2008) found that in Bombay the water crisis worsens due the "denuded public realm" (108); Smith (2000) and Moffat and Finnis (2005) drew similar conclusions in Cape Town and Kathmandu respectively. Thus, planning efficacy in understanding the broader implications and causes of socio-ecological issues is also challenged.

These three research perspectives, when viewed together, compel planning to rethink definitions of urban, development, gender, nature, scale, and agency from the point of view of processes of production and consumption. The contradictions and dualisms in planning (male/female, west/third world, urban/natural, developed/underdeveloped) should also be rejected. Based on these critiques, a new definition of international planning emerges. International planning needs to imagine an urban that is produced and reproduced through (gendered) social, ecological, political, economic, and cultural processes. As Roy (2007) articulates powerfully, "the world is not flat and planning needs a more contoured knowledge of cities" (11). Theoretically and

practically, instead of examining the presumed causes of underdevelopment, we should attempt to understand the worlding of Third World cities. Thus, international planning becomes a pivotal field where the production of global, local, traditional, modern, urban, gender, and nature can be examined through (including, though not limited to) the lenses of justice, equity and difference.

Based on this definition, planning's (and my) political project is to imagine a new ecological future which emerges from the production of socio-nature, and allows socio-economic class, gender, and spatial relationships to be configured along more just and equitable lines. Thus, developing planning strategies that emerge from a deeper understanding of how policies are written, implemented and negotiated will help bridge the distance between the perspective of city officials, technicians and urban poor residents. Therefore, a nuanced understanding of the connections between social equity, gender, ecology, planning have been critical for my project.

I have argued that international planning, in its current form, is neither well developed as praxis, nor supported by a robust theory. Borrowing from the work of international planning theorists such as Roy, Rao, and Yiftachel and through a critical review of feminist political ecology and urban political ecology, I have explored a possible redefinition of international planning. Gender and development studies allows for the deconstruction of the category of gender, while feminist political ecology provides an analysis of how gender is politicized in relationships with ecology. Urban political ecology, meanwhile, provides the theoretical constructs for examining socio-spatial

justice while also illustrating the complex relationships between people and potable water. In the following chapter, I will draw on these theoretical insights and offer a critical review of water security, which, I will argue, is a powerful, Western discourse that depoliticizes gendered inequities surrounding the social and material productions of water in the city, and which ultimately leads to the reproduction of gendered inequalities in water access.

CHAPTER III

Critical Review of the Practices and Politics of Water Security

Mumford (1939) explained that in the new European and North American industrial towns, municipal services were absent and the citizens made their own arrangements for water. Water would be piped to fountains in the public square from where it was distributed manually to individual houses. Soon, however, the rapid growth of nineteenth-century cities overwhelmed the historic reliance on wells, water vendors and other sources. As the importance of individual hygiene in public health increased, water became a matter of public concern and, therefore, could not be managed by private water companies. This led to the introduction of centralized water supply systems that eventually became the norm in 'modern' cities (Gandy, 2006), and "the close relationship between urban water infrastructure and the development of municipal governance emerges as one of the critical dynamics behind the development of the modern city" (Gandy 2004: 367). Soon, large-scale, centralized infrastructures and institutions were built to acquire, treat and distribute water in the modern city, making water management central to the Western planning model exported to the Global South beginning in the colonial era.

In the colonial planning project, water became a political tool as well as a marker of modernity. In places such as Lagos, Delhi, and Mumbai (Gandy, 2005; D'Souza, 2006), British city planning resulted in the production of categories of modern and

developed, formal cities, but also, conversely, in the production of poor, dirty, unmodern and uneducated residents. These populations, it was suggested, would not understand the value of clean water and sanitation, thus making it unnecessary to develop water delivery systems. As a result, the colonial city was characterized by enclaves of exclusions and inclusions in terms of access to water and other services. Today, postcolonial cities are still marked by this division of urban spaces, and access to potable water is still controlled and used to reproduce categories of residents.

Eventually, the relatively stable hydraulic era of urban water policy during the mid 20th century ended under the pressures of rapid urbanization, economic growth, environmental changes (i.e. climate change) and local shifts in the environment, such as increasing water pollution (Kallis and Groot, 2003; Gandy, 2006). In the 1980s, a new era of water management began (Gandy, 2006) where the idea of water secure and water insecure populations and regions on a global scale began to gain prominence. Today, water is no longer seen simply as a local or regional issue, but has instead become a global concern. Through this globalizing process, water has become incorporated into the discourse of development and the lack of water has become to be seen as synonymous with a lack of modernity and underdevelopment. Notions of effective, scientific management of water have become privileged as pre-conditions for truly modern urban spaces. Instead of attempting to understand water access issues as part and parcel of the broader global project of development, situated within an ongoing process of (post) colonialism, water insecurity is explained by most water management agencies as a consequence of urbanization, increasing populations and failure in management.

Thus, current assumptions that shape policies and practices of water security emerge from Western conceptions of progress and are embedded in the broader discourse of development. Water security draws on traditional international planning models, building on Western epistemologies and rationalities and assumptions of development instead of engaging with the gendered, social and political constructions of water. In this chapter, I will argue that water (in)security needs to be understood as more than simply access to sufficient potable water in the aggregate. Instead, by drawing the literature in GAD, urban political ecology, and feminist political ecology, we can critically reimagine water insecurity as a consequence of gendered relations of power and social production of urban natures, at scales ranging from the global to the local.

THE PROBLEM *OF* WATER SECURITY

It is well documented that a large percentage of residents in Global South countries lacks access to potable water and sanitation, despite the fact, as Truelove (2008), Swyngedouw (2003), and Zehra (2000) have argued, most Third World cities in fact produce enough potable water to meet the needs of all their residents. According to UNICEF (2008), water access varies from under 50 percent in countries such as Afghanistan (13 percent), Somalia (22 percent), and Niger (46 percent), to more than 50 percent in countries such as Indonesia (80 percent), India (88 percent) and South Africa (91 percent). However, these figures do not indicate the multiple sources that are used to access potable water. A high percentage of urban residents in most Global South countries do not have access to piped water supply, and are instead dependent on other means for accessing water, such standpipes, wells, and private water vending. In Asia

alone, at least 50 percent of urban residents are not connected to municipal piped water systems (Zerah, 2000).

Water security is commonly defined as the continuous availability of adequate quantity and quality of water for domestic, industrial, agricultural and ecological uses (UN Human Development Report, 2009). The five core attributes of water security include the availability of sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use (UN Human Development Report, 2009). Water security depends on the adequate management of water resources, the development of sufficient infrastructure, and the actions of the various stakeholders that access and distribute water. It includes both the sustainable development and use of water resources, as well as sufficient protection against water related hazards, such as droughts, and it involves the safeguarding of access to water functions and services for humans and the environment (Schultz and Uhlenbrook, 2007).

Hofwegen (2007) identifies four key elements that are required for establishing water security. The human needs and consumption patterns have to be examined and understood so that questions of how much water is needed, when water is being accessed, and how water is being used can be addressed. The stakeholders, including government officials, civil society workers, and water collectors and users, have to be identified and their roles need to be streamlined to improve efficiency. The water resources, variability of availability, and measures necessary to develop these resources have to be examined. Finally, the water-related infrastructure, what is available, and what is necessary for

equitable, cost-effective and efficient water delivery should be evaluated. Water security, then, refers to the confluence and balance of human need, resource availability and characteristics, availability and conditions of existing infrastructure, costs of developing and maintaining existing and new resources and infrastructure, and financial costs for water users. Thus, water security encompasses issues of availability, accessibility, usage, quality, and management of resources.

Water security also includes protection from floods, droughts and other hazards, food security, and securing livelihood for farmers. However, Hofwegen (2007), Shulz and Uhlenbrook (2007), and Ariyabandu (1999) identify securing human life and needs, and economic and social development as the most important priorities and results of water security. This includes drinking water, health, hygiene, protection against water-borne diseases and access to education and information. Thus, water security is concerned with human interventions in the water systems, wise utilization of water, and efficient distribution.

Falkenmark and Lundqvist (1998) identify five "predicament clusters" (40) related to global water security: water-rich regions; intermediate groups; the groups with high levels of per capita use (Central Asia, US, the Caucasus); poor semi-arid regions with high population growth rates (East, West and South Africa); and 'close to the ceiling' groups (North Africa, West Asia and South Asia). Of these predicament clusters, the countries facing the greatest and immediate threat to water security are in the close to the ceiling group and the poor semi-arid region group. The more water rich countries are

expected to potentially increase agriculture supply to meet the needs of water poor regions and focus on pollution abatement. Of the 48 countries in the world expected to face chronic water shortages by year 2025, most are either in the Middle East, Asia, North Africa or sub-Saharan Africa. Only 12 percent of the world population is using 85 percent of the world's water, and these secure water users are not living in the Global South (Shiva, 2006). The water stressed countries are not only facing issues related to scarcity but are also dealing with increased water pollution (Lundqvist and Gleick, 1997)

Pollution of fresh water sources and depletion and contamination of ground water are some of the most severe ecological consequences of the current water distribution systems, and are indicative of the failure to achieve water security (Lundqvist, et al, 1997), and the burden of these failures is borne disproportionately by first the Global South countries and then, within these countries, by the urban poor (Davis, 1995). In a study of 10 African cities, including Senegal, Benin, Ivory Coast, Mali and Guinea, it was found that between 25 to 85 percent of the residents lacked domestic and agricultural water security (Colingnon and Vezina, 2000). In Delhi, India, it is estimated that at least 80 percent of the urban poor are outside the purview of public policy (Lundqvist, et al, 1997), and are unable to secure adequate quantity and quality of water. This lack of easy and affordable access increases the socio-economic costs of water for the urban poor, including the rates of morbidity and mortality.

In 2009, the United Nations estimated that, at any given time, at least 50 percent of the residents in most developing countries are suffering from water related diseases.

Non-potable water is the cause for over 170 million deaths each year. The WHO reports, at any given time, almost half of the South's urban population is suffering from diseases associated with inadequate provision of water and sanitation (Satterwaite, 1996). Muteva (2001) found that in poorer sections of Nairobi, piped water is not potable because of fecal contamination at source. The Hazards' Center (2010) tested the drinking water at 53 sites in Delhi, including 32 low-income neighborhoods, and found that no sample was potable by the Indian Water Standards. Davis (2005) argues that, in many cases, despite the efforts of the urban poor, such as buying water from private sources, collecting water from distant locations, contamination of drinking water is pervasive. This is exacerbated by the inequitable distribution of costs associated with water, and the poor bearing a disproportionate burden of not just the health, and ecological costs but also the economic costs. Davis (2005) and UNESCO (1997) found that in cities such as Phonm Penh, Karachi, and Dhaka, the poor, who purchase potable water, end up paying 1800, 600, and 500 percent more respectively than the more affluent residents of these cities. This indicates that, based on the current definition and analysis of water security, poor residents in the urban centers of most Global South countries continue to live in a constant state of water *insecurity*.

THE PROBLEM *WITH* WATER SECURITY

In the discourse of water security, increasing demand for potable water, coupled with limited infrastructure and high costs related to water distribution, is posited as the

key reason for water insecurity. It has been suggested that this increasing demand for water, expected to double every 21 years, *"*requires dramatic new approaches to water resources management so as to avoid the worst of the *looming crisis"* (World Bank 2009: 1; emphasis mine). This crisis narrative renders invisible the current water crisis being faced by the urban poor residents in most Global South countries, and it distorts any examination of how water in fact is managed, and how its management is mediated through infrastructure and institutions and shaped by social contexts. Instead, within the discourse of water security, those who supply, manage, access and appropriate water are being placed in the amorphous category of stakeholder rather than as citizens entitled to water access, and the heterogeneous contestations and forms of opposition that are critical to water (in)security are completely undermined. The category of stakeholder also makes socio-economic, socio-cultural, and gender differences in access to water security indistinguishable.

This process of categorization into stakeholders within a crisis narrative is characteristic of the broader development discourse, which privileges linear assumptions of progress towards a universal modernity. The conversations related to water security are still dominated by agencies such as United Nations, World Bank, Department for International Development (UK), and other similar organizations. Although the UN has, since 2006, changed its stance on water security by rejecting the Malthusian perspective that global water issues are a problem of scarcity and population growth (UN, 2006), the World Bank still recognizes private investment and technical consultant as a way to

approach any issues related to water security. Water is still seen as a commodity and the belief is that market forces can lead to increased efficiency (Bakker, 2005).

This persistent dominance of institutional perspectives approaches to water security has recently begun to be challenged in the academic literature. Although there continues to be a paucity of work examining the needs, experiences and knowledges of the urban poor as they engage with urban nature (Swyngedouw, 2005; Kiel, 2008), scholars such as Lundqvist (1998), Lundqvist, Appasamy and Nelliyat (2003), Appasamy (1998), and McCann (2002) have begun to challenge the ambiguous agency-based definition of water security that dominates research in the field. These scholars argue that to achieve water security, it is necessary to acknowledge that urban and rural water systems are connected, yet fundamentally different and that the critical dimensions of urban water security include augmentation of supply, improved distribution in urban areas, and disposal of wastewater. They also argue that water security in urban areas can only be achieved if there is a "reasonable amount of water available" (Lundqvist, et al., 2003). This often requires inter-state and inter-city agreements with downstream neighbors to ensure that sufficient amount of surface water is accessible in urban centers. The surface water is then treated and has to be distributed in an equitable manner. This is also exemplified through case study analyses in Global South countries.

In a study involving 10 African cities, Collignon and Vezina (2000) found that the proportion of people without access to potable water varied from 25 to 85 percent, indicating large gaps in the distribution of municipal services. Based on this data,

Lundqvist et al (2003) contend that the current definition of water security does not clearly define 'access' and, thus, cannot be used in the context of Global South cities where water is often supplied for only a few hours every day or available at community hand-pumps located several miles outside the community. However, I would argue that this intermittent water supply, even though it is regarded as improved water access, effectively indicates water *insecurity*.

Another aspect of water security is safe and adequate disposal of wastewater, which often becomes problematic in Global South cities due to lack of available infrastructure (Lundqvist, et al., 2003). In urban areas, surface and ground water sources are often exploited due to limited infrastructure and a high density of activities. The impacts of this water pollution are felt acutely by people who are unable to afford private water filtering systems and depend primarily on ground water and public water sources. Thus, the health consequences of consuming contaminated water are disproportionately borne by low-income residents in most Global South cities.

Ultimately, this pragmatic, practice-oriented critique of water security focuses on understanding how water systems operate in urban area and their current deficiencies. However, attempting to address the 'issues' related to water security with the right 'technological solution' makes the problematic assumption that technology is value neutral. Instead, the use and access to technology is contingent on socio-political relations. The proposed scientific solutions to water insecurity need to be problematized and analyzed as multi-scalar and multi-layered, situated within a complex context of

cultural preferences, power structures, institutions, physical infrastructure, and socio-political processes. In particular, it is important to understand how the discourse of water security and its attendant emphasis on technical solutions, is intimately linked with an increasing economization of water.

THE ECONOMISTIC BIAS OF THE DISCOURSE OF WATER SECURITY

The current definition of water security emerges from international development agencies and is focused on the human interactions in water systems and a wise utilization of water services (UNESCO, 2007). Water security, it is argued, needs to simultaneously consider the need for human access to safe and affordable water for health and well-being, the assurance of economic and political stability, the protection of human populations from the risks of water-related hazards, the equitable and cooperative sharing of water resources, the complete and fair valuation of the resource, and the sustainability of ecosystems at all parts of the hydrologic cycle (USAID, 2008). This focus on 'fair value' and 'affordability' creates a limited understanding of water security, where the economic value of water remains a major (and in many cases, the only) consideration for water-related decision-making. Although the problem of water security is largely confined to cities of the Global South, these prevailing, economistic approaches to water management are emerging from the West and are being perpetuated by agencies with global reach, such as USAID, World Bank and United Nations. The International Conference on Water and Environment, held in Dublin, Ireland in January 1992, concluded that water has an economic value in all its competing uses and should be

recognized as an economic good[19]. Subsequently, the United Nations Conference on Environment and Development (held in Rio in 1992) stated that economics must play a part in efficient water management.

This reproduction of an economic perspective in water management in Global South countries has led to an increasing trend towards privatization of water delivery (Shiva, 2002), a process that is premised on the privileging of efficiency and pricing over social equity (Bakker 2005). Shiva (2000) has argued that some trans-national corporations, backed by the World Bank, are taking over the management of public water services in Global South countries, resulting in increasing water costs and increasing inequity in access to water. Other critical development theorists argue that many agencies, including the World Bank and Asian Development Bank, reproduce the idea of global water as a scarce good in order to legitimize market-oriented policies and maintain unequal relations of power (Swyngedouw, 2003; Bakker, 2003).

Bakker (2005, 2003, 2000) suggests that the current move towards privatization is part of a broader process of re-regulation. Re-regulation of water, from her perspective, involves three interrelated processes: privatization, commercialization and commodification. She argues that privatization entails a change of ownership or management from the public to the private sector, whereas commercialization is inclusion of concepts such as efficiency, cost-benefit analysis and profit maximization in resource management. However, Bakker suggests that neither privatization nor commercialization

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19 *The Dublin Statement On Water And Sustainable Development*, The Global Development Research Center (GDRC) 1992 http://www.gdrc.org/uem/water/dublin-statement.html

results in the complete commodification of water, if commodification is understood narrowly as the creation of an economic good by standardizing a class of goods or service, and selling them at market-determined prices. On the other hand, Bakker contends that this definition of commodification is extremely limited because water does not fit the category of a commodity as imagined by the proponents of market-based environmentalism. Bakker (2007) indicates that goods failing to meet the necessary criteria for commodification are seen as instances of market failure, which, in the case of water, is related to its biophysical and socio-political characteristics.

Thus, because water pollution cannot be contained easily, and because water, while inexpensive to store is expensive to transport, the commodification of water becomes a complex process that does not follow directly from privatization or commercialization. Water, therefore, becomes a quasi-commodity, a 'hybrid' (Kaika, 2005) that is neither completely natural nor wholly produced. Water, even if thought of as a commodity, remains subject to social and political relations surrounding the production of urban natures, and as a result, water access remains unequally distributed.

In many Third World cities, vast numbers of poor urban residents do not have access to piped water and are forced to depend on standpipes, hand-pumps, wells and, informal private water vendors. Thus, for the urban poor, even as cost increases, quantity of water remains limited. Baviskar (2000) found that in Delhi (and in other third world cities), due to their dependence on private water suppliers, the poor pay approximately 400 times more for potable water than the more affluent residents, even as they consume

a very small share of the public water. The urban poor are unable to afford water filters and often lack information and resources for improving their water quality, which puts them at severe health risks. Swyngedouw (2000) found that a very small percentage of the population in Third World cities consumes the available water, creating distinct enclaves of haves and have-nots in the urban centers of the Global South in terms of how 'natural' resources are supplied and accessed. Mehta (2005), in her analysis of the complex nature of water scarcity, found that water scarcity depends on inequality in access to and control over water resources and is linked to socio-political, institutional and hydrological factors.

Ultimately, this research suggests that urban poor residents in the Global South lack clean, affordable and sufficient water because of uneven supply and distribution, not because of scarcity. Through the privileging of economistic approaches to water management, water has become transformed into a scarce economic resource, making access to water increasingly premised on the consumer's ability and willingness to pay. Instead, drawing on the feminist and urban political critique of international planning, I propose that the uneven access to water emerges from historic and current, and global and local, asymmetrical socio-political and economic processes in urban centers, and through mismanaged strategic planning initiatives and policy making.

LACKING SOCIO-POLITICAL AND GENDER PERSPECTIVES IN WATER SECURITY

In the mid-2000's, a new critique of the discourse of water security began to emerge from proponents of urban political ecology with important repercussions for

international planning theory. Scholars including Harvey (2000), Swyngedouw (2005), Gandy (2006), and Lundqvist (2000) began to argue that the socio-economic dimensions of water must be examined to better understand the current and historic role of power in the access, management and distribution of water in the city (see e.g. Swyngedouw, 1995, 2000, 2002; Kaika, 2000; Bakker, 2000; 2003). From the perspective of urban political ecology, the relationship between the State, residents, and water is dependent on the availability of and access to capital and operationalized through networks of production and consumption (Swyngedouw 2000), which in turn are managed by centralized State agencies or through public-private partnerships. Through these circulation systems, the localized act of accessing water is manipulated across multiple scales, including through the rhetoric of scarcity[20], which increases the competition for managing and accessing potable water.

This rhetoric of scarcity, ultimately, can be understood as integral to the narrative of modernity. Xenos (1989) suggests that the constant struggle against scarcity, in this case water scarcity, is the foundation on which modern society stands. Thus, water scarcity becomes a key part of modern urban spaces, fuelling the need to produce and engineer water. In this way, global capital becomes embedded in water management, and

[20] The World Commission on Water has identified water shortage as one of the foremost threats to humanity. Others see the water crisis as "the most pervasive, most severe, and most invisible dimension of the ecological devastation of the earth" and believe that decentralized management and democratic ownership are the only efficient, sustainable and equitable systems (water democracy) for the sustenance of all. News reports about lakes and rivers drying up and aquifers shrinking reinforce the perception that the world is facing a crisis with respect to water. It is predicted by many that competition for an increasingly scarce resource will drive conflicts within countries and cause water wars between countries. However, according to the Human Development Report (HDR) for 2006, published by the United Nations Development Programme (UNDP), the perception of water scarcity may be a distorted view because much of what passes for scarcity is a policy-induced consequence of mismanaging water resources.

urban water becomes deeply entrenched in the political ecology of the city, the State's political project, and the international divisions of labor and power (Swyngedouw, 2000).

In this way, urban political ecology illuminates the ways in which water is produced, struggled over, contested, and transformed into an indicator of power, urbanization and modernity. Through the perspective of urban political ecology, urban water emerges as a means for exercising control in the city. Water supply, management, and access become enmeshed in the power dynamics and social relationships, creating a highly contested urbanized nature (water). In this complex network, the urban poor remain unable to access adequate potable water to meet their needs. However, while urban political ecologists compellingly argue that water is at the center of power relationships in the city, they unwittingly reproduce normalizing narratives of the urban poor. In particular, they do not delve deeply into the role of gender in ecological decisions making, including the strategies developed by women to access water in urban slums. This is particularly problematic because women are most vulnerable to the challenges posed by water insecurity, as they attempt to straddle traditional water collection and other household roles while simultaneously occupying planned and unplanned urban spaces.

Woman, it has been repeatedly argued, is not an essential category; rather, gender categories are constructed through dynamic interactions between social, political, economic, and ecological factors. Thus, being a woman in the city is deeply linked to interactions with water access processes, including women's role (or lack thereof) in

water politics, policy implementation, and in everyday navigation of policies. Urban water challenges the traditional positions occupied by women in households and the community and gendered engagements with urban space constantly change. While informal practices of water collection forces women to venture outside their domestic space and into the city space, gender constructions compel them to stay within their roles of procurers and maintainers of natural resources (Shiva, 1988). Even as women's mobility is enhanced as they venture outside their communities to access water, they are exposed to restrictions and harassment. And even as urban poor women's access to urban spaces increases as they attempt to collect water from multiple sources, they are forced to remain economically dependent due to the lack of time for work and education. Experiences with water are thus gendered and any analysis of water access processes, water security, water management or water politics, needs to engage with the category of gender.

Despite the importance of women's household duty of collecting water, their role in all political decision-making for water remains limited. Globally, women's representation in politics and in policy-making has increased from nine percent in 1987 to a mere 14 percent in 2000. The World Bank (2001) found that due to slow increase in the number of women participating in the political sphere, more than 30 countries have quotas for women in national governance. Scholars have explored the role of women in politics, and implications of their participation in policymaking, and it has been documented that a politician's gender influences policy making, especially in the Global South (Chattopadhyay and Duflo 2001). Chattopadhyay and Dufflo (2001) found that in

regions with higher number of women participating in policy making the investments in the water related infrastructure increases. However, due to the lack of female involvement, several male biases still shape the way water based decisions are made and implemented in Global South countries such as India, in part through the ways household assets are defined and controlled (Mehta, 2008).

Kaika (2004) defines household as both a material and ideological construction, where natural processes are controlled and social relationships are developed based on interactions around resources such as water. Kaika (2003) interrogates these relationships and suggests that the domestication of water has created 'bad' and 'good' water, where 'bad' is wastewater and 'good' is clean potable water. Gender relations are thus constructed around interactions with water within the household. Kaika argues that even when water is piped into the households, women's tasks around handling water do not change. The 'wet rooms', such as the kitchen and bathrooms, remain the domain of the women, not men. Thus, household level negotiations can reinforce or challenge gender roles constructed around water, making it important to recognize the differences between and amongst particular men and women (Cleaver, 2000).

Policy-makers tend to treat households as units rather than as a space where competing interests based on age, gender, employment, and so on can coexist. There is an inability to process the unequal nature of resource allocation within the household. Agarwal (1996) argues that the idea of a harmonious household perpetuates gender injustices. When this rigid perception of a household combines with the lack of women's

participation in the political sphere, the gendered nature of policy making becomes apparent. Mehta (2008) adds that most national policies accept and draw on the idea of an undifferentiated household.

However, households include multiple actors with different, often conflicting interests. These interests can result in unequal power relationships within the household. Agarwal (1996) argues that gender relations affect the bargaining power of actors within the household and within the larger community. For example, Agarwal found that due to social norms and perceptions, women's contributions and needs are often unrecognized in decision-making processes within the household and thus, women have reduced bargaining power. Measuring these complex social norms is challenging and thus, government policies that are built around households are unable to include and address the unequal gender relations. Equally, the everyday decisions resulting from the general guidelines provided in these policies reflect this male-bias and become complicit in allowing processes such as water access to remain unjust. Thus, women's socio-economic position and bargaining power becomes critical to understanding the gender-water relations.

Sultana (2006) argues that fundamentally struggles over water reflect the struggle for power and livelihood. The women make the major decisions related to household water use – where to fetch water from, where to store the water, how much to store; however their role is simply seen as a reflection of the 'natural' relationship between women and water (Mehta, 2005). These asymmetric gender dynamics within the

household remain unrecognized even as they are constantly produced through interactions with water and they constantly determine water-related division of labor.

Thus, access to water security is gendered and differentiated across global and local scales. In the next section I will draw on the critical perspectives of water security developed in previous sections to show how water security is symptomatic of the problems with traditional, Western-dominated international planning.

WATER SECURITY AND INTERNATIONAL PLANNING THEORY

Water security emerges as more than a measure of volume of water supplied and accessed. As with water access, the discourse of water security is embedded in and contingent on evolving, dynamic interactions between technical, social, and political processes. However, current planning and policy practices in the urban centers of the Global South fail to imagine the contextual and dynamic nature of water security. Instead, planning is premised on a static view of water and water security, reducing it to simply the number of liters of water supplied per capita per day (lpcd), without an equal emphasis on quality, spatial distribution and other socio-economic factors.

Swyngedouw's (2000), in his conceptual triad linking water, power and money found that planning is complicit in determining the exclusion from and access to water through which the city is being shaped. Planning in a 'bacteriological city'[21] (Gandy,

[21] Gandy (2006) defines the 'bacteriological city' as the space that emerged through " a distinctive set of interrelated developments ranging from science and technology to new forms of municipal administration." He uses the term 'bacteriological' to denote the relationship between urban spaces, water, and disease epidemiology, which are in turn connected to planning, policy and engineering initiatives. The 'bacteriological city' includes urban networks that mediate relationship between the city and the body (15).

2004) is concerned with producing a distinction between a hygienic space that is occupied by elites and the unhygienic disease ridden space occupied by the poor. The control of access to water thus becomes a tool to reproduce an elite class of residents in the city (Kaika 2005), and also complicit in the reproduction of the characteristics of the modern, such as being clean, disease-free, moral, and civic. However, since the modern water is reserved for the wealthier modern residents of the city, water access also becomes a powerful tool for producing the un-urban, un-modern other.

The State, under the rubric of planning and policy- making, fueled by narratives of development, modernity, and efficiency, thus controls the spaces of access, management and distribution of water. In this way, access to water also begins to signify planned spaces, and exclusion from water indicates unplanned spaces. Planning's attempt to create a water secure environment results in the simultaneous production of insecure environments, and the modern citizenship of the city's residents is defined based on which of these spaces they occupy.

Planning's static view of water security is compounded by the linear (Asthana, 2008) and opaque (Mollinga, 2008) water related policy-making in the Global South. Asthana (2008) argues that there is a significant disconnect between writing and implementing policies in the water sector (and, I argue, between writing, implementing and *negotiating* these policies). Asthana (2008) goes on to argue that policy making in general and, specifically in the water sector, lack all forms of linearity and is affected by small changes, from both top-down processes and ground up initiatives. Despite the

interactions between multiple players and networks in the formation of policies, Ballabh (2008) contends that the linearity in policy making renders these policies as unable to meet the needs of the most vulnerable populations or preserve (or conserve) water resources. Mollinga (2008) adds to this discussion by critiquing the opacity of policy making. He emphasizes that that there is little to no information on how water policies are articulated, how policy elites operate and how negotiations in the water sector between global, national and regional players takes place. Thus, the piecemeal methods of writing, implementing and negotiating water policies adds to their inability to respond to the range of experiences and perceptions that are a part of water access and management.

Ultimately, water access processes in Third World cities must be understood not only as a socially and politically contingent, but also as a deeply gendered phenomenon. Urban poor women continue to pay the highest social, physical and economic costs associated with the struggle to access potable water, but still, the discourse of water security continues to emphasize technicist and economist approaches to remedy what is, in large part, a socially and politically constructed problem characterized by deep inequalities in access—inequalities that impact urban poor women more than any other group. What is needed, then, is a theoretical approach to water security—and to international planning more broadly—that integrates political-economic and gender perspectives, drawing on complementary understandings of socio-economic relations of power developed in urban and feminist political ecology.

To better illustrate the utility of such an integrated, theoretical perspective, in the following two chapters I will draw on urban and feminist political ecological approaches to examine the socio-political dimensions of water in India. I first provide a critical review of the colonial heritage of water management in India and the relations of power that define the unequal and opaque water delivery systems of today. Next, I focus on the constructions of gender that dominate these water delivery systems, illustrating how the socio-political relations that characterize the discourse of water security in India are deeply gendered, leaving women to bear the greatest burdens of the inequality of water access. The case of India, I suggest, illustrates the contradictions between the economist approaches and Western rationality that undergird past and present planning and water management practices in the Global South, and the social and gender relations that shape meanings and everyday practices of water management.

CHAPTER IV

Water Security and (Post)-Colonial Water Policy in India

In ancient India, water was under community rule. This local control of water played a critical role in maintaining the socio-economic and political independence of the villages and other communities, and allowed these regions to resist and negotiate any centralized control over resources (Asthana 2008). With the arrival of the British colonizers through the British East India Company, however, this system was put under siege. The British Empire claimed absolute ownership of all resources and local residents were reduced to 'renters'. Use of land, soil, and water were all subject to taxation (Hardiman, 2008), and as local residents paid more and more in taxes every year, the funds available to maintain public resources, including well and water tanks, were diminished. Shiva (2002) has indicated that more than 300,000 water tanks built in pre-British India were destroyed during this time, systematically eliminating local governance control of water management in the region.

Even though the colonial encounter in India is often regarded as the main cause of the demise of indigenous water management systems and community control over natural resources (Sengupta, 1980; Shiva, 1989), pre-colonial Indian villages were also shaped by hierarchies and regional politics (Prashad, 2001; Mosse, 2003). These hierarchies were magnified and became a critical part of colonial and post-colonial Indian cities (D'Souza, 2006; Gandy, 2008). In this way, water has always been a socially and politically

constructed product in India, both in colonial and post-colonial times. In this chapter, I begin by discussing three key premises that governed water-related decision making processes in colonial India: social control, financial conservatism and segregation. After this, I show how these colonial strategies, that are deeply embedded within profoundly unequal social relations, still permeate national water policy in post-colonial India, even when the prevailing discourse of water security and the influence of the World Bank has led the Indian state to push for deregulation and privatization in an attempt to modernize the water sector.

WATER IN COLONIAL INDIA

Oldenburg (1989) explains that urban reconstruction in India was motivated in part by the British desire to create a sense of loyalty among the native population. To achieve this goal, senior government officials were removed from the daily decision making processes and the British government created local 'Municipal Corporations' for Indian cities. These bodies "intruded and reconstructed the social fabric of urban life in colonial India" (Oldenburg, 1989: preface), and provided the British government with an entry into the everyday life of the local population (Hansen, 2005). These local bodies used their influence and power to quell any social or cultural resistance to British authority (Gandy, 2008). The municipal agencies disregarded the necessity of maintaining livable conditions in the native Indian housing enclaves, and as a result, these areas became characterized by a lack of access to clean water and sanitation facilities (D'Souza, 2006; Oldenburg, 1989; Klein, 1986).

The post-colonial counterparts of colonial agencies mirror their practices (and are their namesakes). The postcolonial lower government agencies have been awarded a large share of the local environmental decision-making powers (Prashad, 2001), with few or no accountability mechanisms in place (Davis, 2004). The agencies, which, during colonialism, worked to control the native Indian population living in urban regions, now exercise political and institutional control over the urban slum dwellers (Gandy, 2008). The colonial municipal agencies were disinterested in investing public monies for infrastructural development aimed towards the native (poor) populations (Prashad, 2001), and this trend of financial conservatism translates into postcolonial Indian cities. Financial conservatism is defined as the unwillingness of municipal corporations to spend large sums of money on infrastructure improvements (Prashad, 2001). This was central to the decision-making processes of colonial municipalities. These agencies were unwilling to take loans to build new infrastructure (Gandy, 2008), instead preferring to invest in projects that could be funded outright. In addition, the central British government was not keen on investing in local projects (Prashad, 2001). The lack of funds and investment resulted in limiting the scope of infrastructural development in colonial urban India. This governmental disinterest also became the fundamental reason for unequal resource allocation in colonial cities.

British residential enclaves in Indian cities had technologically advanced drainage systems and sufficient potable water. However, the native poor populations were told that it would be "years before all *better* Indian houses would have such systems" (Prashad, 2001: 123, emphasis mine). 'Better houses' belonged to wealthy Indian merchants and

colonial affiliates, and did not include the residences of the urban poor. Essentially, even while making long-term plans for water and sanitation service provision, the colonial government did not acknowledge the needs of the urban poor. The excuse for these anti-poor policies (Kundu, 1993; Sharan, 2002) was cited as lack of funds and resources (D'Souza, 2006; Oldenburg, 1989).

Spatial injustices in colonial India were explained using a language of inequality. The British were regarded as racially, intellectually, socially and morally above the native Indian population (Prashad, 2001; Oldenburg, 1989; D'Souza, 2006). The Indians, with the exception of few wealthier colonial affiliates, were regarded as lacking in social consciousness (D'Souza, 2006; Prashad, 2001), and this was cited as the critical reason for the lack of clean water and sanitation in native residential areas. The British government believed that the native Indians were inherently unable to understand the value of cleanliness (Klein, 1986; Prashad, 2001). It was declared that when the natives understand the value of clean water and sanitation, they would improve their own living conditions (Prashad, 2001).[22]

The colonial perceptions of the urban poor and the practices of uneven allocation of resources also shape current environmental policies in India. Even though the current language of water policies is cited as pro-poor, they primarily benefit the wealthier residents of the city and reproduce spatial separation in urban areas. These post-colonial spaces are bounded and dominated through social and fiscal control mechanisms,

[22] This value included economic, social and cultural value (Prashad, 2001).

segregating the poor residents from the wealthy (Prashad, 2001) and producing slums that are in turn said to be "disfiguring the landscape of cities" (Baviskar, 2003: 95). Through these discursive mechanisms, slum dwellers are constructed as the post-colonial other, deprived of rights to water, and spoken of as dirty and lacking in social consciousness (Klein, 1986). The environmental remedies offered by state government and local agencies are often premised on the fallacious argument that squatters are the primary sources of pollution (Baviskar, 2003; Sharan, 2002); when slum dwellers are forced to access potable water through informal means, they are accused of stealing public water from other legal residents of the city (Sharan, 2002).

Postcolonial water management and supply also introduced Nehruvian notions of socialism in India. Five-year development plans, based on a Soviet model, were proposed to address issues of access to water, food, sanitation, education and education. These centralized plans, still a critical part of the Indian policy environment, highlighted the government's management and developmental goals for the country. The emphasis was on technology, with large hydroelectric projects being floated as a way to address the nation's water problems. Nehru, referring to big dams as the 'temples of modern India', emphasized the need to move from the idealized, community-managed model of water management to a modern, centralized system (while still using a language of culture and tradition) (Gandy, 2006). With water management systems controlled by the public sector, and with the eventual injection of private capital into large water related infrastructure projects, differentiated distribution systems continued to characterize the national water policy and planning in post-colonial, modern India.

The parallels between the colonial and post-colonial government attitudes towards poverty and resource allocation are significant. These similarities imply that the colonial policies and perceptions are being reproduced in postcolonial Indian cities and continue to influence the way poor populations experience urban spaces. The social differentiation in access to water is continually etched onto body of the city using political, economic, social and ecological controls, producing spatial injustices in contemporary Indian cities.

THE CURRENT CHALLENGE OF WATER DELIVERY IN INDIA

For the last two decades, the government of India has repeatedly argued that the county's growing population is putting a severe strain on all natural resources, including water. Official reports indicate that, while urban water supply has improved, access to potable water in rural India remains a critical problem. Problems such as distance between water sources and villages, maintenance of infrastructure, water management, depletion and pollution of groundwater, and low cost recovery are cited as critical problems in rural India. The impacts of water problems in rural India have been discussed with a focus on gender implication (Prokopy, 2005; Mehta, 2005), agriculture (McKenzie, 2004; Singh, 1999); health (Mazumder; et al, 1998; Jalan, 2003). This rural bias in programs to improve water supply is fairly recent (Raghupathi, 2003) and is driven in part by official statistics: only 83 percent of rural India has access to water from 'improved sources'[23] (ADB, 2005; Govt. of India, 2002; NIUA, 2005), while 96 percent

[23] According to the Joint Monitoring Program for Water Supply and Sanitation (WHO and UNICEF) improved water sources are the ones likely to supply safe drinking water. Household connections, public standpipes, boreholes, protected dug wells, protected springs, and rainwater collection are considered 'improved'. Unprotected dug well, unprotected springs, vendor provided water, bottled water,

of urban regions are covered. While urban water supply and sanitation was regarded as important from the First Five Year Plan (1956) to the Fifth Plan (1979), from the Sixth Plan (1985) onwards there was a shift in priority to rural sector.

However, based on the urbanization trends discussed earlier in this dissertation, examining water supply, access and management in the growing urban sector of India is critical. Even though official figures indicate that 96 percent of urban India has access to water[24] from improved sources, these statistics gloss over the irregular supply, unequal access, and low quality of available water. Another problem hidden by these statistics is the decrease in the duration of water supply and the number of underserved regions in urban areas (Jha, 2010).[25] Thus, even as my work examines the national and city-based statistics that indicate increased coverage areas, it also looks at the historical and current socio-political causes and implications of potable water access, supply and management in India.

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tanker water are considered unprotected (JMP, WHO/UNICEF Definitions, http://www.wssinfo.org/definitions-methods/introduction/).

[24] The Asian Development Bank (1995) has indicated that these figures are exaggerated and do not convey the problems in urban water supply. For example, while Government of India statistics indicate that safe water access in Chennai is approximately 85 percent, ADB argues that this figure is 64 percent (1993).

[25] Jha (2010) argues that this data is difficult to find and is largely anecdotal in nature.

Year	Percentage of Population with Access to Safe Drinking Water		
	Urban	Rural	Total
1970	60.8	5.7	16.7
1981	77.8	30.9	41.3
1991	81.4	55.5	62.3
1993	84.3	--	--
1999	89	64	70
2004	95	83	86

Table 2: Water Distribution in India; Source: Zerah (2000) for 1971-1993 and Joint Monitoring Program – WHO and UNICEF for 1999 and 2004

Table 2 indicates the percentage of India's total population with access to safe drinking water or water from improved sources. However, these statistics have to be approached with caution. Zerah (2000) has found that it is difficult to find city level data for water access because the census does not provide this information. These statistics also do not take into account all cities, often excluding cities with least access and are not informed by type of water source, and the irregularity and unreliability of water supply from these sources. Zerah (2000) also argues that, despite the increasing coverage indicated in the above table, the number of household water connections in most cities is very low. Only 40 percent of Delhi households have private water connections, and in Chennai and Lucknow this figure is as low as 32 percent (ADB, 1995). Zerah (2000) suggests that these statistics only look at optimal water production figures and do not include water losses. Thus, water supply figures, as related by the state, can be seen as

exaggerated and do not include the socio-political aspects, such as religion, that are a critical part of water supply, distribution and management.

'JISKI LATHI USKI BHAINS'[26] – ROLE OF RELIGION AND CASTE FOR WATER ACCESS

Religion and politics play a critical role in access to and distribution of resources such as water. In the early 1990's, Bhartiya Janta Party's (BJP) began to gain political power in India and introduced Hindutva or Hindu nationalistic ideology into mainstream Indian politics (Mawdsley, 2005). Hindutva was defined as the "unifying principle which alone can preserve the unity and integrity of [India]; it is a collective endeavor to protect and re-energize the soul of India, to take her into the next millennium" (BJP, 1996)[27]. Hindutva emerged as a very communalistic, conservative and masculine project. Its proponents became actively involved in the environmental movements, including those related to water access in India. Hindu nationalism, imagery and texts were brought into the environmental discourse and were equated with ideas of religiosity, and sacredness (Mawdsley, 2005).

Hindutva popularized religious concepts of Hinduism that were linked to the environment (See: Dwivedi, 2000, Mallebrien, 2000 and Hoffman, 1997). This ideology created a popular imagining that Hindu's have ownership of and responsibility towards the environment, excluding all other religions and effectively creating an ecological Other. Water, a dominant symbol in Hindu mythology, became a particularly important

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[26] Abbas (a member of the 'water mafia' in Kathputli) mentioned that, in water, the philosophy is *Jiski lathi uski Bhains*." (The one with the stick owns, the buffalo, implies - Might Is Right)

[27] BJP 1996 Lok Sabha Elections Manifesto

part of this political 'religiousification' of ecological resources. This religious view of who owns nature also allows caste-based differentiation in access to water. Thus, in India, religion and caste both become a part of how water is accessed at the level of the community.

Gandy (2006) found that, in the case of Mumbai's water, taps are often separated on the basis of religion and caste. During my fieldwork, I found that people from different religions and castes often collected water at different times of the day. The Muslim residents at one of my research sites had developed an alternate water distribution system due to repeated conflicts with the Hindu population. Problematic assumptions of cleanliness and civility such as "Muslims and the Purvanchalis (residents from North East Indian states) don't use as much water as us" or "they (for both lower castes and different religions) don't bathe as often as we do" were dominant in the community. In the newer resettlement colonies, where such parallel systems had not yet been developed, the lack of religion-based separation between times of water collection and water sources had became a source of anxiety for some of the residents.

In Mumbai, Gandy (2006) found that in case of severe water shortages caste and religion become the way to determine priority of use. Even though caste and religion are less critical in cities as compared to rural areas (Gandy, 2006), they become a part of the water access processes, adding another layer to the socio-political inequalities in water access that remain unaddressed and unacknowledged in water policies.

WATER SECURITY, GLOBAL INSTITUTIONS, AND INDIAN WATER POLICY

The Constitution of India lists 'Water' as a state subject, leaving the national government with limited power to intervene in water-based policies unless in a matters of 'public interest' (Asthana, 2008). No national government body addressed water related issues until 1985, when the National Water Resources Council was established. The council was given no statutory powers (Ray, 1995). One of the key actions taken by the council was to establish the Ministry of Water Resources, which was given responsibility for the planning, coordination, and management of water as a natural resource. The ministry was also responsible for writing general policies related to water. Water pollution and control, on the other hand, remained under the purview of the Ministry of Environment and Forests and urban water supplies under the Ministry of Urban Development (Ray, 2008; Asthana, 2008). One key role of the Ministry of Water Resources was to draft the first national water policy, which was finally adopted in 1987, after 40 years of independence and six five-year plans, indicating, Ray (2008) suggests, the low priority assigned to a national water policy in post-colonial India (24).

The first National Water Policy was adopted during the leadership of Prime Minister Rajiv Gandhi. The policy declared that water is a "prime natural resource, a basic human need and a precious national asset, and its development should be governed by national perspective" (Ministry of Water Resource, 1987: 1). It provides a hierarchy of water uses, emphasizing that in allocating water, drinking water should be have the highest priority, followed by irrigation, hydropower, industry, and other uses. The policy also indicates that "the need for a national water policy is abundantly clear: water is a

scarce and precious national resource to be planned developed, and conserved" (Ministry of Water Resources, 1987: 3). While acknowledging social justice and equity problems related to access to water, the policy also mentions that, "water rates should convey the scarcity value of the resource and foster the motivation for economy in water use. It should adequately cover the annual maintenance and operational charges and a part of the fixed cost" of public utilities (Ministry of Water Resources, 1987: 8).

The language of the policy was widely criticized as being ambiguous (Asthana, 2008; Iyer, 2008) through its use of terms such as national perspectives and social justice. The policy did not clearly indicate which and whose perspectives are considered part of the nationalist imaginary (and whose are not), or what constitutes social justice (or what is social) in terms of water access (for example, is it emphasis on gender, socio-economic class, caste, or region). By leaving open this room for interpretation, the 1987 policy remained ineffective and unclear. Another critical gap in the policy is its lack of engagement with issues related to the role and influence of international development agencies in decision-making processes and in the privatization in the water sector. These critiques began to emerge between 1996 and 1999, when water became part of the broader, Indian reform project.

In 1994, a committee named Expert Group on the Commercialisation of Infrastructure Projects was formed under the chairmanship of Dr. Rakesh Mohan. In 1996, this group released the Indian Infrastructure Report: Policy Imperatives for Growth and Welfare (IIR). This report indicated that low water tariffs, high costs to public

utilities, high losses, bad demand management and poor cost recovery were the key issues facing India's water sector. Drawing on the economist perspective of the discourse of water security, the committee suggested that India should incorporate several reforms in the water sector, including increased privatization and public-private partnerships (Asthana, 2008). Centralized control of water management should be limited, and instead, local boards should produce treated water and then privatize the retail operation, creating a public-private enterprise (Asthana, 2008). The local municipal bodies and water boards would be responsible for identifying the private contractors and then monitoring their work. The involvement of the private sector, it was implied, would improve cost recovery, develop better tariff structures and rationalize consumption (Asthana, 2008). Another infrastructure report, the National Infrastructure Report (NIR) released by the Asian Transportation Institute in 1998 echoed some of the claims made in the IIR, arguing that "the deficiencies in water supply were from a lack of commercial approach" (184).

The IIR also drew on the technicist rhetoric of the water security discourse, suggesting a restructuring of the water supply and management systems "through technological upgradation and improved design in a way that would improve the regularity of water service, lower project costs and, increase the willingness to pay on the part of the consumers" (26). It clearly argues for the commercial management of water agencies at local levels, thus shifting the role of people attempting to access potable water in the city to that of consumers. It also argued for the "unbundling of assets and operations", such that resources such as water could be "managed by a regulatory

authority that could independently monitor the asset" (29) (Asthana, 2008). The IIR called for disregarding 'dated' ideas such as the exploitative nature of private sector involvement calling these "old arguments that are losing its validity due to the technological and organizational innovations" (28).

It is also critical to note that the IIR used 'developed countries', including the United States and Singapore, as models to develop its strategies for water supply and management systems and for recommending the involvement of the private sector. Thus, even as the IIR explicitly introduced ideas of decentralization, efficiency and cost recovery, it implicitly led to the emergence of discourses of modern and developed in the water policy environment. Asthana (2008) argues that while in developed countries shifts towards privatization are based on national decisions and regulations, in developing countries such policy shifts are dependent on international commitments, in particular from the World Bank. In 1993, The World Bank shifted from providing project-to-project monetary assistance to providing sector loans in the area of water, and soon became the largest donor for water projects. From the mid-1990s to mid-2000s, lending for water resources development and water-related services accounted for about 16 percent of all World Bank lending (World Bank, 2004). In the case of India, the IIR recommendations for decentralization and privatization thus led The World Bank and the Asian Development Bank to play key roles in national water policy.

In 1993, The World Bank suggested that water management in India should be based on three Dublin principles to combat the disorganization and inefficiencies in the

water sector: ecological principle, which argues that independent water management by various sectors is not suitable and land and water should be managed together; institutional principle, which indicates that water management is best done when all stakeholders participate including the state, the private sector and civil society (especially women) and that water management should be based on subsidiarity, with actions taken at the lowest appropriate level; and instrument principle, which argues that "water is scarce and greater use needs to be made of incentives and economic principles in improving allocation and enhancing quality" (World Bank, 2004: 1).

Based on these principles, the World Bank emphasized the need for private sector involvement in water delivery in India, arguing that the cost of government failures is much higher than that of market failures. To further its economistic vision for water management in India, the World Bank used a three-pronged approach for its interventions. Training programs for bureaucrats and government officials were started both in India and the United States, and policy dialogues with various levels of government were also initiated to help the World Bank understand the current functioning and vulnerabilities of the Indian water policy sector. Knowledge-sharing workshops were organized to share information that was collected, analyzed, more importantly, interpreted by the World Bank with the media in order to increase public awareness of water issues. Finally, the knowledge was disseminated to relevant policy makers and organizations through papers, articles and survey data (statistics) (Asthana, 2008).

Thus, the World Bank used the rhetorical power of statistics and narratives of scarcity, development, and water crisis to create a platform for private sector involvement in the water sector in India (Asthana, 2008). The influence exerted by the World Bank on Indian water policy remains profound until this day. As recently as 2010, the India Economic Forum hosted government officials, senior officers from private companies (including Pepsi Co., Unilever, Hindustan Construction Company), and senior officials from Asian Development Bank and The World Bank. The key issues discussed at the forum included cost, regulation, and rationalization of water, reflecting the continued emphasis on economics and commercialization of water infrastructure in India. This economic emphasis, shaped by the interventions of the World Bank and the broader discourse water security, also influenced the most recent iteration of India's national water policies.

Based on the politics of market liberalization and shaped by the pressure from the World Bank and other international agencies, several reforms were introduced in the 2002 Indian national water policy. The 2002 national water policy declares that "water is a *scarce* and *precious* national resource to be planned, developed, conserved and managed as such, and on an integrated and environmentally sound basis, keeping in view the socio-economic aspects and needs of the States" (Ministry of Water Resources, 2002: 1, emphasis mine). The policy remains vague on what is considered environmentally sound and does not define how and what socio-economic aspects will be kept in view when making water related decisions. It also reduces the politics related to the

multiplicity of scales in water supply, management and access by talking vaguely of the 'needs of States'.

The policy clearly mentions that "the involvement and participation of beneficiaries and other stakeholders should be encouraged starting from the project planning stage" (Ministry of Water Resources, 2002: 6). However, the policy document does not define what constitutes a stakeholder and a beneficiary, how level of involvement will be determined, and what the role of these stakeholders will be (Asthana, 2008). The assumption that service-delivery will improve with private sector involvement or increased citizen participation fails to problematize the relationships between private agencies, NGOs, city residents and public institutions. There is also no clear indication of what participatory decision-making processes mean and how these processes will be operationalized in the national, regional and local context.

The 2002 policy calls for regular monitoring of structures and system related to water supply and also indicates the need for rehabilitation and modernization programs. It neither clarifies what modernization and rehabilitation programs are, and why these are necessary for the water sector. Finally, the 2002 national water policy declares that water rates should convey the scarcity value of the resource to the users and encourage economy in water-use. The cost of water, it is stated, should be adequate to cover the maintenance and operation charges and a part of the fixed costs. It also suggested that the success of the policy depends entirely on the development and maintenance of a national consensus and commitments to its underlying principles and objectives (Ministry of

Water Resources, 2002: 11). However, the policy is ambiguous regarding what constitutes a national consensus and how this will be achieved. Instead, the 2002 national water policy is deeply influenced by the discourses of scarcity, modernization, development and crisis, and seems to accept economics of water supply, access and management as the central driving force behind decision-making.

The 2002 national water policy has had a significant impact on the contested waterscape of Indian cities. In the case of Delhi, as it becomes the 'showcase of India' (Supreme Court of India, 2006), the city is gaining prominence in the Indian government's reform project. In defining all water users as water consumers, the state renders these consumers responsible for meeting the scarcity cost of water. While implicating the growing population in the 'grave water crisis of the future' (Government of India, 2006), the state is absolving itself from providing water to those who cannot afford to pay for it, while simultaneously overlooking the gendering of water in the city. The water consumer becomes more important that the slum dwelling woman who is not a part of the official demand-supply network. Efficiency, technology and infrastructure in water supply, access and management are prioritized, even as women's daily water access strategies, inequalities in access, and exclusions from policy that dominate the waterscape of cities such as Delhi, are rendered invisible. In the next chapter, therefore, I will analyze the central role of gender in the politics and social constructions of water in India.

CHAPTER V

The Role of Gender in Indian Water Policy

Swyngedouw and Kaika (2000) and other urban political ecologists argue that equitable access to ecological resources (including potable water) in urban regions of the world is based on how specific socio-environmental condition are produced, the power relations that are integral to these processes of production, and the questions of who gains and who loses that emerge from these processes. In this dissertation, I have argued that gender is an overlooked but important part of this analysis of water policy, and the broader discourse of water security. In the following chapter, I will attempt to provide a feminist critique of the social and political constructions of urban water in India, showing how the gendering of Indian water policy has severe implications for women's access to water.

Gender is embedded in the five core attributes of water security – access to the sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use. Women collect and carry water daily from public standpoints to meet the needs of all their households. This activity, often contentious, also puts them at physical risk for harassment and disciplining in city spaces. Women are chiefly responsible for procuring and transporting potable water and for using and maintaining water within

households (Gleick, 2006). Motiram and Osbergs (2010) have used data[28] from the 1999 Indian Time Use Survey to examine the time spent collecting water in both urban and rural areas of the country (Table 3). Motiram and Osberg's (2010) study clearly indicates that water collection remains a woman's activity in both urban and rural regions and that, on average, women spend relatively equal amounts of time to collecting water in urban and rural areas. This data, however, does not mention the times during the day that water in urban areas may be available for collection, which becomes an important factor in determining women's ability to access to education and employment opportunities.

	Rural Households		Urban Households	
Gender and Age	% of total water collection time	Average Time if Collected	% of total water collection time	Average Time if Collected
Boys (6-14)	1.3	48.4	0.4	42.19
Men (Above 14)	7	39.9	10.9	39.8
Girls (6-14)	4.8	50.13	2	36.03
Women (Above 14)	86.9	47.06	86.7	43.06

Table 3: Water Collection Time in Urban and Rural Households in India; Source: Motiram and Osberg (2010)

Ray (2008) argues that low female literacy rates are directly linked to women's water related responsibilities. In 2001, female literacy in India was 53.7 percent, lagging behind male literacy rate by approximately 22 percent. Women in both rural and urban India are unable to access employment opportunities due to the irregular and unpredictable water supply. Even though women are aware of where water is available, how to access it, and, often, of the quality of water supply, they continue to be marginalized in water-based decision making, and bear relatively higher cultural, social

[28] This data covers 77,593 persons from 18,591 urban and rural households in 6 Indian states, including Gujarat, Tamil Nadu, Madhya Pradesh, Meghalaya, Orissa and Haryana. This data is from Motiram and Osberg's (2010) study.

and economic consequences of lack of access to potable water than men. In the case of India, these restrictions on women's role in decision-making are intimately connected with the social norms governing ownership of land and other assets.

In speaking of resettlement and relocation of residents from slums in Indian cities, Mehta (2008) argues that urban redevelopment policies tend to be based on formal arrangements of asset ownership. Mehta's analysis also holds true for the water sector where, even though women are in charge of procuring and managing household water, they have no ownership over potable water sources. Thus, women's water access remains informal and outside the purview of policy. In this way women are caught in a double bind in the water sector: they have no involvement in the writing and implementation of the policy, and are only able to negotiate these male-dominated rules in an informal way. Water access and water security for women in Indian cities, then, can be seen as informal processes that are neither governed, nor planned for. The recourse is often the intervention of civil society organizations that create more distance even as they provide a bridge between women and water-related state institutions.

NGOs working in the water sector claim that approximately one-third of their members are women. Still, this does not translate into a stronger voice in the decision making process (Agarwal, 1992). Even as NGOs and other civil society organizations attempt to increase the visibility of women in the urban water sector, women's involvement remains limited by relations of power within the communities. The restricted nature of women's interaction in writing and implementing water policy renders their

everyday water access process as illegal, informal and subversive. Thus, gender and water become deeply connected complex social and political constructs such that women from low-income neighborhoods often derive a strong sense of identity through their daily appropriations and interactions with water.

Jenks (1993) argues that the "urban self is constructed through interactions with others" (18). For slums and shantytowns, what defines an urban dweller becomes complex due to the multitude of social, cultural, economic and political identities. Often (poor) women living in slums are attempting to balance cultural and urban identities, household and community roles, and traditional and modern responsibilities. Thus, as women walk outside their communities to collect water for their families, they construct new urban identities for themselves, which involve balancing fear, risk, and mobility. While women's traditional water collection role remains intact, they are forced to be present in public spaces where they are constantly watched and disciplined. The additional burden of interacting with predominantly male policy makers and politicians in most Indian cities becomes a social reason for women to engage in informal water access strategies and excludes them from any state-provided redress mechanisms related to water. Even though they are forced to remain passive in decision-making, women are also expected to abandon docility and violently acquire water for their households (Wilson, 1991).

Thus, water collection activities result in intense social and political relationships with individuals and groups from different backgrounds, and also become sites for

physical and social conflicts. Even though there is an assumed naturalness to the interactions between women and water, and the gender identities constructed around water are taken for granted in both rural and urban settings (Mehta, 2000), these identities are being simultaneously confronted and reinforced in the low-income urban neighborhoods of Indian cities. Thus, the co-production of water and gender and the politics of poverty related to water access processes are clearly visible in the low-income communities of modern Indian cities, and the spaces of (water-related) decision-making, at national, regional and local levels are gendered through and through (Massey, 1994). Ultimately, this gendering of decision-making and practices surrounding water is reflected in national water policy and management in India.

WOMEN, WATER AND THE STATE

In 2000, the UN published the "State of Women in Urban and Local Government – India". This report indicated that only 5.71 percent of the persons in administrative government services are women. At the ministerial level, there are 3.2 percent women in national government and 6.2 percent at local and regional levels. In Delhi, of the 70 state representatives, nine were women. In other Indian states such as Haryana, there are four female representatives out of 90, and in Maharashtra this number is 11 of 288. Despite the 1993 legislation calling for 33 percent reservation of seats for women in local legislative bodies, their role in policy making remains limited.

The UN found that constraints such as domestic responsibilities, lack of training and experience in urban governance issues, lack of support from senior men, fear,

corruption, and lack of money/power prevent women from participating in local decision making processes. These constraints and statistics from the UN report indicate that, currently, the spaces of decision making at local and regional levels in India are deeply gendered (male). This is clearly visible in the water sector, where policy statements repeatedly call for increased participation by women, empowerment, and gender equity, while overlooking the fact that these programs are being drafted in spaces barred to women.[29] Thus, the state rhetoric of gender equity needs to be unpacked to understand the current power imbalance in water related decisions.

In India, the idea of gender equity in access to water has been discussed in policy documents (See: 7^{th}-10^{th} Five Year Plan, National Water Policy 2002, 2007, National Policy For the Empowerment of Women, 2001). The National Policy for the Empowerment of Women[30] (NPEW) states:

> Special attention will be given to the needs of women in the provision of safe drinking water, sewage disposal, toilet facilities and sanitation within accessible reach of households, especially in rural areas and urban slums. Women's participation will be ensured in the planning, delivery and maintenance of such services. (6.2)

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[29] Here, my aim is not to essentialize 'women', but to contextually relate the construction of 'women' in these spaces. I am arguing that in the spaces of policy making, gender is continuously 'defeminized', and through these constructions, these spaces are barred to 'women'.

[30] O'Reilly (2006) and Pigg (1992) have argued that empowerment is conflated with development such that it is an attempt to create a positive change in a current negative condition. Thus, O'Reilly found that in rural India state projects focused on empowerment are thoroughly gendered, such that men are powerful and thus modern. (965). This was also clearly visible during my fieldwork, and thus, I argue, can be seen in the urban India as well. Most State employees talked of 'teaching' women the best way to collect and store water and of how women from 'these colonies can legally' procuring water, using NGOs or community groups. The focus was entirely on 'improving' the women's interactions with water. Thus, legality, empowerment and participation were constantly conflated with development and modernity, such that someone had to teach women from urban poor neighborhoods to become more developed in order to live in modern Indian cities.

I argue that when poor women are discussed in policy documents, they are imagined as a heterogeneous, monolithic category, where socio-economic class becomes the only characteristic that affects access to water. Agarwal (1997) argues that gender is socially constructed and embodies both the material and the ideological. The difference between abilities, roles, desires, ideas and characteristics of men and women and the interactions with structures of class, caste and religion all affect the construction of gender (Truelove, 2010). However, these processes of production are neither clearly understood nor responded to in policy-making and planning. In making gender a biological category, the Indian state documents render invisible the difference in the way men and women negotiate urban spaces and bargain for water at the level of the household, neighborhood and the city. Thus, in Indian cities, gender is reduced to the abstract binary categories of men and women, where, in interactions with water, women are conflated with poor women. Water and interactions between water and poor women, also remain unproblemitized. Water is imagined as technical and modern, and not seen as a part of household relationships between men and women, and of interactions between women and urban spaces. While the role of poor women in accessing drinking water is repeatedly discussed, usually with ideas of participation and empowerment, the role of this modern water in the production of the category of poor woman is not analyzed (see e.g. O'Reilly, 2006, 2009).

Ultimately, I argue that the state attempts to acknowledge the difference between women's and men's experiences in accessing and managing water (Coates 1999) in an uncritical way, and, thus, the role of access to water in perpetuating these differences is

also left unexamined. The male-dominated decision-making in water is normalized and woman is reduced to the other gender with a special connection with nature (water) that needs to be planned for, relating back to arguments by feminist scholars such as Shiva and Mies.

In the Indian context, eco-feminists, feminist environmentalists and feminist political ecologists have argued that there are material and ideological links between women and water (natural resources) (see e.g. Agarwal 1991; Shiva, 1989; Cleaver, 1998; Rocheleau, 1996; Mehta, 2005; Bakker, 2003; Truelove, 2010). Women are seen as either having a special connection with nature (Shiva, 1981), as politically subjugated victims in the race to control environmental resources (Agarwal, 1991), or as having everyday practices that produce (and are produced by) social differentiation in access to resources (Truelove, 2010). Historically, women have been responsible for procuring and maintaining water (Shiva, 1981) but with the state's continuous economization of the resource, water is no longer seen simply as a natural resource. This forces women to re-negotiate their relationship with water at all scales, even as the views related to the women-water connection in official documents remains unchanged. During fieldwork, I found that in their everyday practices, women from Kathputli Colony and Savda Ghevra accepted their 'traditional' role as water collectors even as the bargaining for water forced them to negotiate with men, navigate city spaces and violently appropriate water.

Ahmed (2005) found that in rural regions of India, women were not a part of the water related decision and believed that this was because "the land belongs to men, and

as women, they rarely were involved in irrigation related activities." Men, on the other hand, believed that should not have to take care of women's tasks, such as water collection (Ahmed, 2005). Ahmed (2005), and other scholars (see e.g. Cleaver, 1998, Sultana, 2006, Coates, 2001, Zwarteween, 1997), have argued that even though women are the primary domestic water users and collectors in rural regions of the India and other Global South countries, their say in the decision making process is limited. While the women's relationship with water, and the construction and perpetuation of gender roles that emerges from this interaction have been explored for rural regions of the South, these interactions remain less clear for the urban centers.

In an analysis of the role of women in the water sector, Mehta (2005) found that in the village of Merka, Gujarat, women and men were unaware of the discrepancies in access of and control over water because of the normalization of these roles. O'Reilly (2006), in her analysis of water access in rural Rajasthan found that women were constructed as the other through State discourses of modernization and development. She argues that rural woman, through their interaction with modern water projects, are seen as traditional, domesticated and backward. I argue that Mehta and Ahmed's idea of normalization of roles in the water access process and O'Reilly's constructions of woman can also be seen in the urban water sector. However, in the city these are further complicated as the traditional women are forced to occupy modern spaces and use economic water.

Thus the discourse of development and the modernization of urban water create a gendered double bind, where women are forced to fulfill traditional roles in modern spaces. The water/woman connections imagined and constructed by the state are unable to respond to these complexities, and simply attempt to improve participation and empower women through programs. The empirical, traditional views of planning and of water security also become clearly visible in the state's engagement with gender. Thus, in Indian cities such as Delhi, urban poor women become the subject of planning, and the men who plan for them, dominate the spaces of policy-making.[31] This relationship is also echoed at the level of the neighborhood and in my interaction with the communities.

REFLECTIONS ON MY POSITION AND GENDER

Women interact with urban spaces differently from men, and, as discussed above, the conflict in gender roles in Indian cities also shifts the perceptions of water collection from being a household duty and social activity for women (Ahmed, 2005), to a highly contested and combative activity that occurs in the public sphere of the city. Sultana (2009) in her work on arsenic and water supply in Bangladesh found that as women enter masculine spaces of the city, their femininity was reimagined in their community and household, and if they remained confined to feminized spaces of the household, they were forced to access low quality water. At my research sites too, women who used the public standpoints had access to better quality water as compared to the intermittent water supply in the households. Thus, even as the historically clear boundaries between

[31] In earlier chapters, I have talked about how Third World cities become the subject of planning that is based on ideas of development and modernization. This trend is visible within the planning in Third World cities, where urban poor become the subjects. Within this hegemonic policy-making and planning, gender adds another layer. Thus, at multiple scales, planning and policy are producing subjects *to* plan for.

women and men's spaces and activities are made porous, women's role in water access processes remains rooted in ideas of connections with nature.

During fieldwork, as a female researcher on water access processes, I encountered these boundaries and roles in multiple ways. During some conversations, men belittled women's role in water access, arguing that women were using water as an excuse to leave their homes more and more. Some men sympathized with the women, claiming that "it is tough for them but who else will do it". Another popular idea was that "households have to be run, the woman of the house has to get water to make this happen". Some men complained that women were harassed as they collected water, which was shameful for their whole family. In each of these arguments, the domestic role of women in the water access processes is emphasized. Even as men encourage women to leave the spaces of households due to water needs, the purpose of the mobility remains to fulfill their traditional roles of managing and running households.

In each of these comments, the men were also imagining a stable, homogenous 'woman', where women from female-headed households, lower castes, and other social hierarchical systems were rendered invisible. Thus, even as the category of woman is being constructed and reconstructed at multiple scales through water access, use, and management processes, their role in the water sector is still being seen as static. However, women are not always passive victims of this unjust elite and male environmentalism. Women from low income communities of cities such as Delhi develop a strong sense of identity that emerges from the need for continuous appropriations of water and the

persistent struggles against their exclusion from the formal structures and spaces of the city (see e.g. Sultana, 2009; Meinzen-Dick and Zwarteveen, 1998; O'Reilly, 2006; Lahiri-Dutt, 2001).

My investigation of the women's role in water access processes led to a constant interrogation of my own gender identity that emerged from being an Indian woman, being from middle-class New Delhi and working in low-income neighborhoods, and of having the "western gaze" (Mohanty, 1994) of an American researcher. With this continuously shifting gender, my presence also constantly altered the spaces of water access processes.

The women from my site often placed me outside their imagining of woman. I did not have to fulfill the roles they did, nor did I have to abide by the same rules. I was, in many ways, an outsider, not only for the city but also from the very category of woman. I was often asked to represent the women from my site, emphasizing the difference between them and me. I was allowed to inhabit, even invited into, legal spaces of decision making by my class and by my status of an America-return, and thus, my presence in spaces of illegal water access caused great initial unease. I was told repeatedly that "we (women) have permission to get this water" or that "no one says anything if we take water from here". My legal resident status forced the women from squatter colonies to interrogate their own right to the city's water in every space I inhabited with them. On the other hand, in the legal resettlement colony, as we waited for the tanker, women would ask me to talk to the local politician on their behalf

regarding water, livelihood, and transportation. Again, my gender was reconstructed and I was firmly placed in the spaces women assumed were barred to them or spaces they believed they should not inhabit. My class and gender gave the women access to certain spaces through me, while my interactions with water in their everyday spaces also highlighted the wide gap between our lives.

I was allowed in the political spaces of water, such as DJB offices, NGO offices, the inside of a tanker, more as a foreigner than as a woman. The defeminization of my role usually began with the words she has come from America. Not only did this tag absolve me from fulfilling traditional gender roles in spaces of water-related decision-making, it also allowed me to question those who were making these decisions. However, my interactions and questions were also simultaneously depoliticized and rationalized because I 'didn't really know how things work in India'. Thus, even though women from my research site believed that I could represent them or attempt to solve their water problems, I was equally bound (albeit differently) by the constructions and depoliticization of gender in the spaces of water-related decision-making. This became critical in my interactions with the women in the community and with the agents of the State at both my research sites.

In this chapter I have attempted to argue that women interact with water in multiple ways, and across multiple scales. I have suggested that gender emerges as a fluid category in interactions with, and water access processes and gender mutually construct and produce each other. By critically examining my experiences and those of the women

from my research sites in multiple spaces of water access, and management I have introduced the dynamic nature of the relationships between water and gender, and of the interaction between them. The discourse of water security, as it draws on Western rationalist and economist ideas, is unable to respond to the dynamic, socio-political constructions of gender. Thus, critical gender perspectives need to be brought to bear on the critique of water security as much as urban political ecology perspectives. In the next chapter, I will interrogate this in more depth for New Delhi.

CHAPTER VI

Water Management, Water Security and Gender In Delhi

During a field visit with an NGO to a slum built on a small hill in Delhi, I became friends with a girl called Meera. She asked for my help in learning English, and I spent one evening with her every week practicing the language. We always sat on edge of the hill her shanty colony was built on, watching the sunset over Delhi, talking about her work, about life outside the slum, and about the flux and fixity of life in Delhi's slums

In 2010, the Commonwealth Games fever had gripped Delhi. The city was to showcase India's growth and development for the rest of the world to see. It was to be the proof undeniable of urban, modern India's arrival on the global platform. However, before that could be done, the 'unurban' and the 'unmodern' had to be swept under the carpet. So, in January, as Meera and I sat down on the hill with our tea, men and women in sporty tracksuits came and oversaw the placement of a large board with the picture of the games mascot and the caption, "Delhi's Pride! Commonwealth Games, 2010". The board hid us from the view of the road, effectively creating a boundary between the unmodern slum and the world-class city, and it also hid from us the city and its sunset.

The board, as it (unsuccessfully) tried to hide poverty from the rest of the city, also made visible the validity and relevance of certain assumptions and motivations

behind my own research project. Nature, whether water, land, or even the less tangible sunset, was being produced and distributed across Delhi in ways that were creating distinct groups of haves and have-nots. The maximum impact of these decisions was on residents of urban poor neighborhoods, such as Meera's slum. The urban poor were, however, not actively defending their right to the city and its resources, nor were they protesting these decisions, but were silently negotiating policies and resisting rules to continue living in Delhi. Certain decisions - such as placing boards that hide slums, resettlement of urban poor residents from the central city to the periphery, or limiting access to potable water - and people's responses to these – stealthily removing the boards at night, moving back from the periphery to live in temporary homes in their old neighborhoods, or stealing water in the pre-dawn hours - are simultaneously changing the landscape of Delhi. This is the landscape I negotiated during my research, following the movement of potable water through it.

Through these suggested improvement policies, notions of illegality and informality of slums and slum residents have been reproduced. The urban poor continue to be forced to negotiate the modern, New Delhi subversively, without rights and recognition, and planning became a reason for their continued and increasing vulnerability. Ultimately, while socio-economic status plays a very critical role in access to potable water, the burden of lack of access to potable water in New Delhi is borne disproportionately by poor women (Gleick 2006). In this chapter, I will analyze the historic and current city-sanctioned strategies in New Delhi that perpetuate the inequalities in water access, distribution and management. I will then critically examine

the effect of these economist and technicist strategies on water security, and their social, political and health implications for women.

BUILDING 'NEW' DELHI

Delhi is constantly changing. It is being reimagined, reconstructed, built up, and torn down. Delhi today covers a total of 1486 sq. km, of which 528 sq. km is considered urban (Economic Survey of Delhi 2003-2004), and the population of the city has grown from 400,000 in 1901 to approximately 20 million in 2011. Many historical processes have shaped today's Delhi. In 1911, the city was made the capital of colonial India. The British, instead of rebuilding the existing Delhi, created a new adjoining city - 'New Delhi' - that became a symbol of colonial power in India. New Delhi, designed by the western architects and planners, marked the difference between the 'modern' British and the 'unmodern' Indians. Wide boulevards, ordered landscapes and European classical architecture became the planning ideals for New Delhi. The old city, in the meantime, continued to be unplanned, disorganized and congested (Batra, 2010; Sharan, 2006). Despite multiple environmental concerns, the British government remained reluctant to spend money on developing Old Delhi. As discussed in chapter IV, the financial conservatism of the British and the need to maintain social control through politics of exclusion determined planning interventions in colonial Delhi. Planning in post-colonial Delhi still reflects these exclusionary practices.

Following independence in 1947, providing housing for the elite that could afford to pay more remained the focus of city agencies, etching class power on the body of the

city (Batra, 2010; Sharan, 2006). As the City attempted to address the increasing number of slums in Delhi, it developed a master plan for the future growth of the city. This plan called for providing 'decent' housing for all residents, and through these housing schemes, controlling the number of slums. Baviskar (2003) and Sundar (2001) have found that slums housed the construction, factory and domestic workers – the people who were building the elite city. Thus, slums were essential for the making of New Delhi (see e.g. Dupont, 2007), but at the same time, the need for space in the rapidly growing city led to state-sponsored slum removal and resettlement policies.

In 1970's, under the leadership of Sanjay Gandhi and Jagmohan, this slum resettlement and removal began to accelerate. The idea was to create a city where the backward rural migrants were exposed to urbanity, civility and modernity (Batra, 2010). Thus, the image of slums and slum dwellers as unmodern and as captive population in need of development began to emerge strongly in the state's rhetoric. During the economic reforms of the 1990's, the Delhi government's focus shifted to for-profit urban development for affluent households, which in turn required more residential, commercial and residential complexes developed through public-private partnerships (Batra, 2010).

The slum policy developed during this decade of reform perpetuated the ideas of the 1970 slum resettlement policies. It responded to slums in three ways: through in situ upgradation, resettlements and environmental improvements. This three-pronged approach addresses only the environmental problems in slums and adds a time-based

limitation; for example, if the land owning agency does not require the land for 15-20 years, in-situ development can be considered or resettlement on a lease of 5 to 10 years can be pursued (Dupont, 2008). More recently, during the preparations for the 2010 Commonwealth Games, resettlement of slums gained judicial and policy support (Bhan, 2010; Dupont, 2007).

Currently, of Delhi's 20 million residents, at least 20 percent are housed in such resettlement colonies (Table 4). But eligibility to live in these colonies is severely restricted and determined based on ration cards. Ration cards are city-issued identification cards that are used to access food and supplies at government-authorized shops. However, many residents have no access to these cards due to corruption and lack of information.[32] Moreover, the surveys to determine eligibility are often conducted in the afternoon, when many residents are at work, which, irrespective of their year of settlement, excludes them from receiving a plot of land in a resettlement colony or in an in-situ development.

[32] The politics of ration cards are important here. Not all residents have access to ration cards, and have to pay certain NGOs or government officials to get access to this card. Using this card as the sole criteria for determining housing options, excludes many residents who are unable to gain access to the card due to the corruption. On the other hand, residents with better financial means are able to pay bribes and access ration cards. Thus, basing resettlement on arbitrary dates and on a system steeped in corruption, slum dwellers are rendered even more vulnerable to exploitation at the hands of both private and public agents (See: Darlo, 2010; Dupont, 2008).

S. No	Type of settlement	Approx. Population in lakh (2000)
1	J.J. Clusters	20.72
2	Slum Designated Areas	26.64
3	Unauthorised Colonies	7.40
4	Resettlement Colonies	17.76
5	Rural Villages	7.40
6	Regularised-Unauthorised Colonies	17.76
7	Urban Villages	8.88
8	Planned Colonies	33.08

Table 4: Population by Type of Settlement in Delhi; Source: Delhi Master Plan 2021 (one lakh persons = 100,000)

The eligibility system further holds that to live in the resettlement colonies, only slum residents who moved to Delhi before 1990 are eligible to receive 18sqm land on a lease of 5 or 10 years, and for those who moved to the city between 1990 and 1998, 12.5sqm land is allocated for 5 or 10 years. Each eligible household has to pay Indian Rs. 7000 ($150) for the land. Thus the City's strategies create an arbitrary and inconsistent system of determining eligibility, which reinforces a static and exclusionary notion of citizenship and ensure that the slum dwellers, tempted by the idea of owning legal land, do not mobilize around the issue of resettlement.

Currently, there are 52 resettlement colonies in Delhi, all located on the periphery of the city and housing approximately two million residents.[33] Around these colonies, ineligible squatters have camped in temporary, informal housing. This process, I argue, shows how planning has simply relocated the slum problem to less visible parts of the city. In fact, resettlement colonies are indicative of a critical institutional failure, where

[33] As the city has grown, the periphery has shifted and some resettlement colonies are located closer to the center. However, the resettlement colonies planned in the last decade are at least 30 KM outside the city center (Dupont, 2008)

residents are left to deal with increased problems of accessing water, livelihood, transportation and food (Tarlo, 2000). Savda Ghevra is one such colony. Despite these failures, however, planners in Delhi emphasize the city's success in providing formal housing for the urban poor, even though instead, the resettlement policies serve to reproduce spatial inequalities, segregation, and exclusionary narratives of slum dwellers.

During multiple conversations with policy makers, and other government officials in Delhi, I was told that "people come to Delhi from all these villages and don't understand what it means to live in a city like this". This indicates a conflation of urban poor with 'backward' rural communities, echoing the impetus behind the 1970's slum removal in Delhi. The 'backward' residents are continually excluded from being able to live in the (ambiguous) word class city. Thus, I argue that the drive to modernize Delhi has resulted in a sustained, systematic and deliberate eviction of the poor from city's formal spaces. The official arguments that 'Delhi has to become the showcase of modern, transitioning India' or 'Delhi has to become London or Paris' or, the most recent, 'Delhi should become a world-class city,' have become discursive devices that are used to reconstruct the city according to elite interests.

Baviskar (2003) argues that the narratives surrounding the slogans, 'make Delhi Paris' or 'Make Mumbai Shanghai,' also serve to appropriate certain city spaces through strategies of environmentalism. Water becomes a critical part of this strategy. As I have argued earlier, the discourse of water security is subject to the modernization agenda and technicist practices that drive the discourse of development in the Global South. Using

Baviskar's (2003) concept of 'bourgeoisie environmentalism', I add that city planning in Delhi, with its continued emphasis on overpopulation, growing slums and water practices of slum dwellers, renders the urban poor as strawmen for water scarcity and the resulting water insecurity. In this way, the poor become responsible for the water scarcity experienced by those who live in a world-class city. The urban poor with their informal and illegal water practices become a reason why Delhi is not yet a world-class city--and their removal becomes the way to achieve development. Water management, therefore, becomes central to the city's development project, premised, as I have discussed in chapter IV and V, on technicist and economist approaches that ignore socio-economic and gender dimensions of water. The next section provides an overview of Delhi's water resources, policy and management; and discusses the limitations of these strategies in being able to address the gendered and differentiated access to water in the city.

WATER MANAGEMENT IN DELHI

Delhi Jal Board (DJB) is responsible for providing potable water to the city's residents and for managing the water infrastructure in the city. Although other government agencies, including Municipal Corporation of Delhi (MCD), New Delhi Municipal Corporation (NDMC), Delhi Cantonment Board (DCB), Public Works Department (PWD), and Central Public Works Department (CPWD) are also involved in Delhi's water management, DJB remains the central and most visible municipal body in the city's water sector.

The Delhi Jal (water) Board (DJB) came into existence through the Delhi Water Board Act of 1998. The DJB is responsible for treating surface water and for the production and distribution of potable water in Delhi. Even though DJB is not directly responsible for providing water to residents living in certain parts of the city (areas under the jurisdiction of NDMC and DCB)[34], it is supplying bulk water to local municipal bodies for further distribution to residents of these areas. The organization structure of DJB is depicted in Figure 1. The chief minister of Delhi heads the water board, and the state government nominates all DJB members. The political leadership of DJB indicates a lack of autonomy and a complex relationship between politics and water supply and management in the city.

[34] NDMC is responsible for the "core area of National Capital Territory of Delhi. It includes the home of the president and prime minister of India, and residences of Ministers, M.Ps, and diplomats, Five Star Hotels, Hospitals, besides general public, mostly Central Government employees" (NDMC, 2011, http://www.ndmc.gov.in/Departments/Civil/Dept_CivilEng_Water.aspx)
DCB is a local municipal body under the Ministry of Defense is a central subject. DCB receives Delhi Jal Board water only for Naraina.

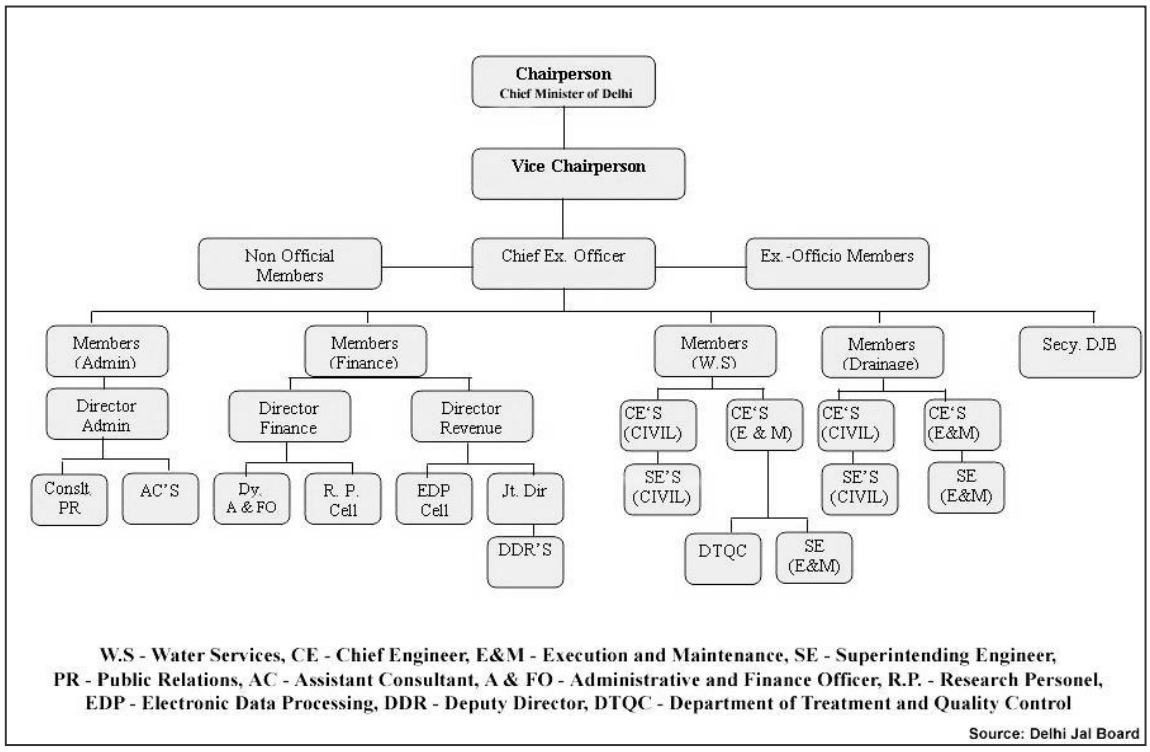

Figure 1: Organization of Delhi Jal Board; Source: Delhi Jal Board (2000)[35]

The sources of water for the DJB are the river Yamuna, the Ganga Canal, Bhakra Storage[36] reservoir and groundwater. Water from the Yamuna is drawn directly from the river, and indirectly via the Western Yamuna Canal Yamuna water is diverted to Western Yamuna and Eastern Yamuna Canal at Tajewala barrage in Haryana. After feeding the Delhi WTPs, the western canal terminates in Yamuna through the Najafgarh Drain. Surface water from two other rivers reaches Delhi via the Upper Ganga and Bhakra (Narwana Branch) canals respectively. The relative quantities of water available for Delhi from these sources are depicted in Figure 2.

35 Delhi Jal Board (2000)
http://delhijalboard.nic.in/djbdocs/r_t_information/docs/docs/organisational_chart.htm

36 Ravi-Beas water from the Bhakra-Nangal Project

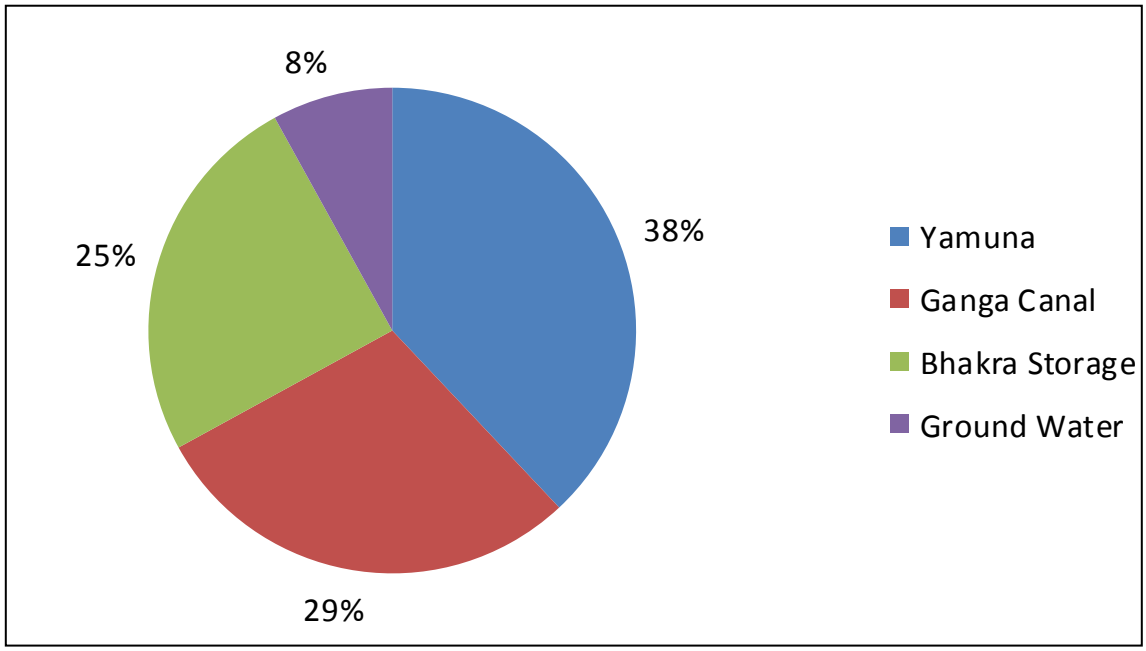

Figure 2: Surface Water Sources in Delhi; Source: Delhi Jal Board Summer Action Plan, 2007

The Upper Yamuna River Board, a regulatory body that is part of the Union Ministry of Water Resources, was created primarily to regulate the allocation of available water amongst states, monitoring and reviewing the progress of all projects up to and including the Okhla barrage. The Bhakra-Beas Management Board, another regulatory body, supervises the administration, operation and maintenance of Bhakra-Nangal and other projects on the rivers Sutlej, Ravi and Beas. It is also responsible for water allocation from the Bhakra storage reservoir. The water drawn from the Upper Ganga Canal is based on an agreement with the Uttar Pradesh Irrigation Department and groundwater is used to increase water supply. Five Ranney wells[37] are used to extract

[37] High-capacity horizontal collector well close to a surface water source, named after its inventor Leo Ranney

water from the Yamuna riverbed, and groundwater extracted through tube-wells increases the total water supplied.

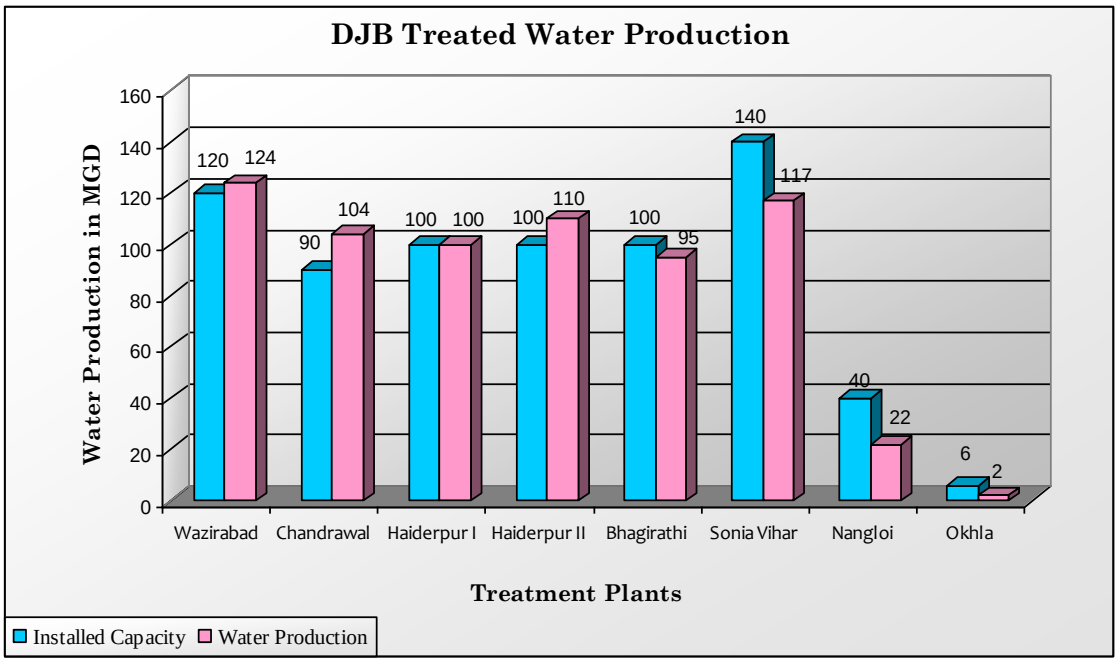

Figure 3: Delhi Jal Board Treated Water Production; Source: Delhi Jal Board Summer Action Plan, 2007 (MGD = Million Gallons per Day)

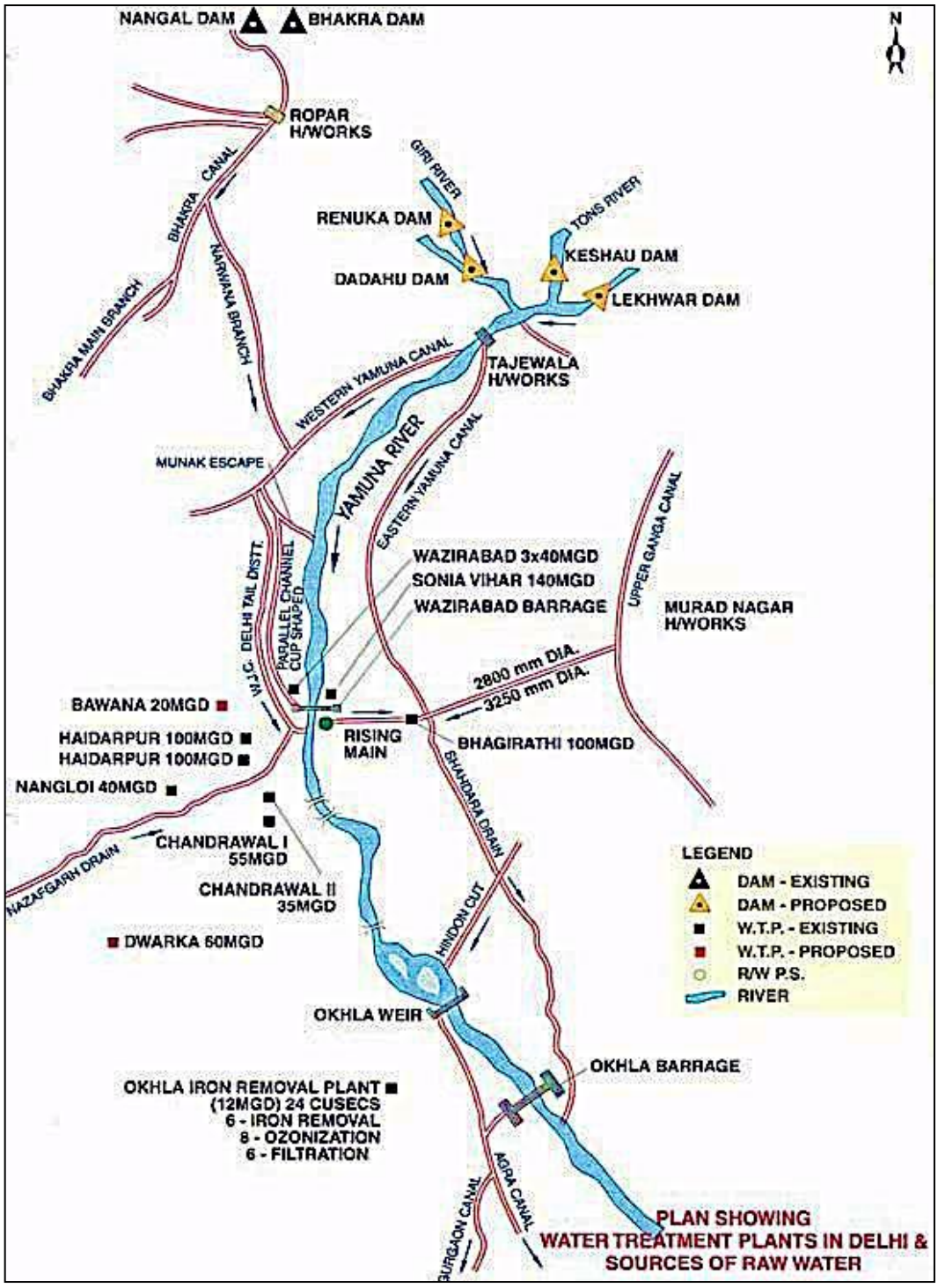

Figure 4: Water Treatment Plan Locations; Source: City Development Report, 2008

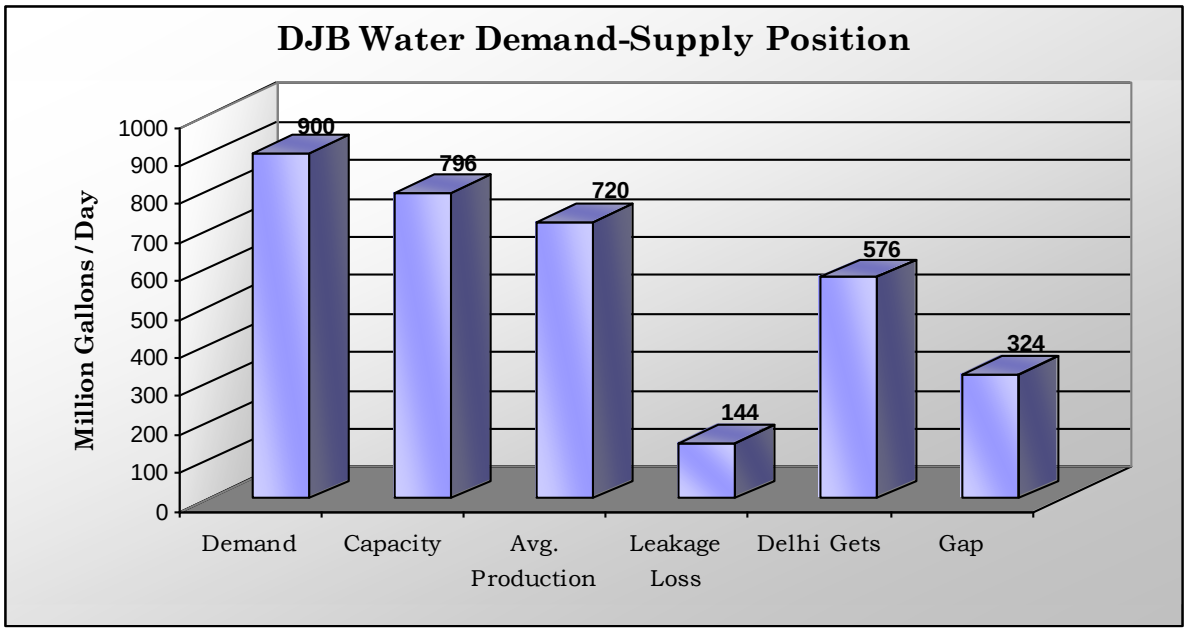

Figure 5: DJB Water Demand and Supply; Source: Delhi Jal Board, Summer Action Plan, 2007

Surface water supply for Delhi is treated at eight water treatment plants: Wazirabad, Haiderpur I and II, Chandrawal, Bhagirathi, Sonia Vihar, Nangloi and Okhla (Figure 4). Even though, DJB has the capacity to supply 796 Million Gallons per Day (MGD) of treated water, only 576 MGD is currently being supplied (Figure 5). Roy (2011) has found that the long distances between the treatment plants and the reservoirs result in reduced pressures in the pipes and increased chances of leakages. Maintenance of current infrastructure and the complete lack of pipes in certain parts of the city highlight the inefficiencies in the planning and management of Delhi's water distribution systems.

Water management in Delhi must also be understood within the overarching Delhi Urban Environment Infrastructure Improvement Project (2021) (DUEIIP), released in 2001 by the Delhi planning department. The DUEIIP report aims to define the "future course of the planning in Delhi" and states, in part, that the aim for Delhi is to create "a well-managed, clean and dynamic city serving its citizens, the nation and the world" (DUEIIP, 2001: 2). The DUEIIP also states that "water supply should serve all areas of the National Capital Territory (NCT), including the planned growth areas, and that water demand should be reduced and service delivery improved through increased efficiency and commercial autonomy" (DUEIIP, 2001: 39). The key institutional and planning improvements suggested in this report are to charge 'customers' the 'real cost' of drinking water, allow private sector participation, establish independent regulators to set fair and affordable tariffs, improve technical capacity, and improve information systems for planning. Thus by privileging economistic and technicist approaches, the master plan associated with water delivery in Delhi is situated squarely within the discourse of water security and supports broader, national strategies of rationalization and deregulation of water delivery.

The key goal identified in DUEIIP is to provide all Delhi citizens with equal access to adequate quantity of potable water through technological advancement, improved efficiency, better training, and capacity building. The report, however, fails to indicate who is recognized as a citizen of Delhi, and if residents of informal neighborhoods are included in this group. DUEIIP specifically mentions providing water to planned growth areas, which excludes any unplanned growth in the city. The way in

which water will be provided to the planned areas that are currently not served by infrastructure is also not specified. The report emphasizes cost recovery, even as it fails to identify what the real costs of water delivery are and how these are being calculated. The DUEIIP indicates the need to tap new and distant water resources, and build more water treatment plants; however, there is no mention of recognizing and assisting local initiative for development and for protection of water resources. The DUEIIP, similar to the National Water Policy and other reports that document the state's vision for Delhi, remains vague even as it highlights the continued emphasis on economic, technical and infrastructural aspects of water management and distribution in Delhi. This emphasis becomes even clearer when looking at the solutions to the city's water problems, as proposed by DJB in a report developed by Tata Consulting Engineers (TCE) in 2003.

The City's plan, post DUEIIP, was to launch the reform process immediately and to create visible changes in the water service delivery in Delhi. The TCE report attempts to delineate and analyze some specific solutions that will assist Delhi Jal Board in improving water supply, including augmentation of water supply, rationalization of water, and technological advances. 'Augmentation' involves increasing the supply of treated water by optimizing existing water treatment plants, and by expanding the water supply system in the city. Bawana and Sonia Vihar plants have been constructed as a part of this augmentation strategy. Echoing recommendations in the TCE report, the DJB is now focusing on rational distribution of water in order minimize imbalance between water demand-supply and to improve customer satisfaction (Delhi Jal Board, 2004). Specific technical strategies to reduce non-revenue water, such as using GPS tracking

devices on tankers and leakage detection apparatus for distribution mains for new water treatment plants, are also being used (Ramesh, 2010; pers. int.). Technical advancement becomes a way to respond to the current inability of Delhi's planning to meet to the needs of all residents, but another strategy is to use private supplies to meet any gaps in management and coverage.

Even though in my interviews, DJB officials vehemently denied any large-scale privatization of water in the city, private companies have been managing smaller units of the organization since 1994. For example, a private company handles the billing for DJB, and the Sonia Vihar and Okhla treatment plants are both operated and managed by Degremont, a French corporation (Singh, 2006). On a smaller scale, there are approximately 250 private tankers operating in Delhi that are used to meet any potable water shortfall. DJB uses these tankers to supply water to residential areas (including slums, where water filtering options are limited or absent), government hospitals and jails. Asthana (2008) and Daga (2003) have found that these private tanker operators take no responsibility for the quality of water they supply, and that the water from these tankers is considered an 'unimproved source' and is not fit for consumption.

In addition to the numerous private contractors engaged in the water sector, multiple central, state and local bodies are also involved in supplying water and collecting bills in Delhi. Some agencies, such as Central Public Works Department (CPWD) report to the Central Government, others (including the DJB) are under the Delhi city government, while yet other agencies, such as the MCD, have elected

councilors. Due to their conflicting political and institutional affiliations, these agencies rarely work well together and instead often attempt to undermine each other, seriously reducing their efficiency. Currently, the collective efficiency of all water-related state agencies is estimated at 55 percent (Truelove, 2008). This inter-agency conflict and lack of efficiency in the water sector is further compounded by the intra-agency politics of DJB. Due to DJB's affiliation with the state government, with each change of political leadership, the institutional memory of DJB and the water sector in the city is affected. During conversations with DJB technicians and engineers, they repeatedly expressed frustration with the unstable and politicized management. These complex and political relationships in water management result in severe problems with water supply, including pervasive inequities in distribution, which in turn place additional burdens on women in the slums of Delhi.

SPATIAL INEQUALITIES IN WATER SUPPLY AND IMPLICATIONS FOR WOMEN

The great inequality in water delivery in Delhi is stunning, and underscores the need to identify who is most affected by the discrepancies in water distribution, and how inequalities in access to potable water are being produced and negotiated in the city's urban poor neighborhoods. Singh (2006) highlights the inequality in water supply and access in Delhi thus:

> An average room in 5-star hotel in the city (Delhi) consumes 1,600 liters of water every day. VIP residences consume over 30,000 liters per day. The Prime Minister's house accounts for 73,300 liters of water per day and the President's residence consumes 67,000 liters per day, but the 50 percent of the Delhi residents that live in substandard settlements, struggle to collect, or buy 30-90 liters of water per capita per day. (39).

This disparity of water access is evident both at the household level and also varies significantly between different areas of the city, in particular between formal, modern residential areas and slums. On the household level, data from the Delhi Human Development Report (2006) suggests that approximately 86 percent of the city's urban poor households fall short of the minimum of 50 liters per capita per day (lpcd) of potable water needed to maintain minimum domestic needs for human health and well being (Gleick, 1996; Table 5). On the scale of the city, some areas receive approximately 500 lpcd of potable water per capita per day, while other parts of the city receive only 30 lpcd (Table 6).[38] This disparity can also be assessed in terms of housing type: Table 7 highlights how residents in poor housing struggle to meet their daily water requirements.

[38] It is interesting to note that Najafgarh/Dwarka, Narela and Mehrauli (the areas with least water access) are all located at the current periphery of Delhi and house several resettlement colonies.

Percentage of Households with Access to Safe Drinking Water		
Water Supply in Liters Per Capita Per Day (lpcd)	**1991 (percentage)**	**2001 (percentage)**
more than 200	33.4	31.9
150-200	31.4	29.1
100-150	19.2	21.3
50-100	7.5	8.4
less than 50	**8.5**	**9.3**
Total	100	100
Percentage of Slum Households with Access to Safe Drinking Water		
50-100	10.9	12.3
25-50	71.6	71.7
less than 25	**17.5**	**15.9**
Total	100	100

Table 5: Water Distribution in Delhi; Source: Delhi Human Development Report (2006).

District	**Water Supply in litres / capita/ day (lpcd)**
MEHRAULI	29
NARELA	31
NAJAFGARH/DWARKA	74
SHAHDRA	130
NEW/ SOUTH DELHI	148
PAHARGANJ	201
WEST DELHI	202
CIVIL LINES AND ROHINI	274
WALLED CITY	277
KAROL BAGH	337
NDMC	462
CANTONMENT	509

Table 6: Delhi Water Supply; Source: Delhi City Development Plan (2006)

S.No	Type of settlement	Population in lakhs	Demand in million liters per day (MLD)	Supply in MLD	Shortfall/ excess
1.	JJ Cluster, Designated Slum Area and unauthorized colony (I)	13.96	59.33	No piped supply	(-) 100%
2.	JJ Cluster, Designated Slum Area and unauthorized colony II	40.80	173.40	20.43	(-) 88%
3.	Planned Area	75.50	1698.75	990	(-) 42%

Table 7: Percentage of Delhi's Population with Inadequate Water Supply; Source: DUEIIP: Delhi Status Report 21 (Asthana, 2008 and Singh, 2006).

The inequality in access to potable water access in Delhi is exacerbated by the intermittent and unreliable supply system (Truelove, 2008). The city's poorest residents are often unaware of how much water will be available to them, at what time this water will be supplied, and for how many hours it may accessed, thus increasing their vulnerability. Even within slums that *do* have access to piped water, there is no guarantee of sufficient supply (Zerah, 2000; McIntosh, 2003). Zerah (2000) found that the rationing of water via the pipe system or intermittent water supply (IWS) is one of the most critical problems with Delhi's water. IWS is defined as a piped supply service that delivers water to users for less than 24 hours in a day (McIntosh, 2003). Such irregular water supply causes anxiety, contestation, and requires at least one person from each household (usually women) to delineate specific times for collecting and storing water. Within this

rationing system, community taps located in urban slums have the least number of hours of water supply in the city (Truelove, 2008). The water rationing system and the unequal distribution of water infrastructure in the city adds to the inequality in access. The state's focus on increasing water supply through the piped infrastructure (Government of India 2001) implies that the parts of the city that remains unconnected to this infrastructure will remain excluded from any benefits of the current schemes to increase water supply.

The water that is not priced, or goes missing, is called non-revenue water. Apparent losses of water in Delhi, which include the water lost due to unbilled consumption or theft, accounts for two percent of the city's non-revenue water (Truelove, 2010). There is much uncertainty regarding how much water is being lost to leakages. Based on official statistics, approximately 36 percent potable water is being lost to leakages on transmission and distribution mains, and from overflow at storage tanks. Other unofficial statistics indicate that 48 – 59 percent of treated water in Delhi is unaccounted for (Asthana, 2008).

Despite the fact that most of the water lost is due to managerial and institutional inefficiencies, the Delhi Development Authority indicates that "wastage of water will have to be curbed mercilessly" (DDA, 2005). DDA (2005) also calls for controlling water theft and using technological advances to address the inadequate water supply in the city. The language used in DDA's statement here (and elsewhere) exemplifies the idea that in order to produce a city (and an image of a city) where sufficient quantities of water are being efficiently supplied, the (slum dwellers) water thieves have to be mercilessly

controlled (removed), while, simultaneously creating a high-tech, efficient system of water distribution, which will add to the aesthetic value and modern imagining of Delhi. As the official story implicates the 'slum dwelling urban water thieves', it also blames them for the poor quality of the water in the city. Planning documents often refer to slums as unhygienic and to slum dwellers as polluters (Baviskar, 2003), thus implicating them in the spread of water-related pollution and diseases--even as the burden of these diseases is borne disproportionately by the slum dwellers.

WATER QUALITY AND PUBLIC HEALTH CONCERNS

Zehra (2000) found that no water from an IWS source is safe to drink. The vacuum conditions created in the pipe during the supply causes foul water to be drawn into the water pipes. Health workers in my study sites also explained that due to the cracks in the pipes and the intermittent water supply, sewage is constantly sucked into the pipes, leading to severe water contamination. In case of households with no piped connection, the main water sources are shallow hand-pumps. In 2000, approximately 70 percent of Delhi urban poor households were using water from these hand pumps (Zerah, 2001). This water is considered non-potable and is not recommended for drinking and cooking purposes (Government of India, 2005). Thus, inequities in health (water-borne disease burden) are also being produced and distributed unequally in the current water management systems. A National Family Health Survey of India (2009) found that, of the households surveyed, approximately 28 percent of household with children up to

three years of age reported at least one case of diarrhea in the two weeks preceding the survey. This number increased to 45.6 percent when only urban poor households were examined (Figure 6).

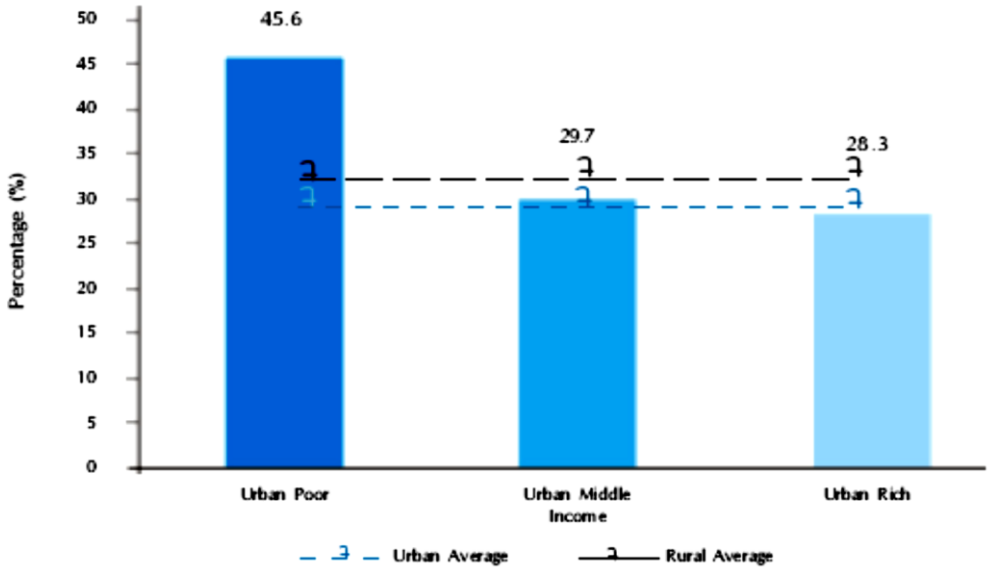

Figure 6: Occurrence of Diarrhea in Two Weeks Before Survey. Source: Government of India, 2005-2006[39]

During fieldwork, I worked with the Hazards' Center to analyze the quality of drinking water in low-income neighborhoods of Delhi. Of the 53 samples collected and tested from pipes, tankers, wells, and hand pumps, only two samples were potable based on the Indian Drinking Water Standards. Of the seven samples collected from near water treatment plants, only one was found to be free of contamination. We found that 38 samples had fecal coliform and 22 had high bacterial colony count. The residual chlorine was absent from only nine of the 26 treated samples, indicating that the current degree of

[39] This figure was adapted from a 2005-06 citywide household survey conducted by the Government of India. 45.6 percent of the poor suffered from diarrhea in the 2 weeks preceding the survey.

chlorination is inadequate. Above permissible limit fluoride was present in 37 samples and arsenic was present in at least 17 (Hazards Center, 2010). The disproportionate water-related disease burden on the urban poor was also exemplified at both Kathputli Colony and Savda Ghevra (Figure 7 and Figure 8).

Figure 7: Ground Water Collected in May at Kathputli Colony From a Private Hand pump in Gujarati Camp; Photograph by: Nishtha Mehta

Figure 8: Ground Water Collected in June from a Private Hand pump in Savda Ghevra; Photograph by: Nishtha Mehta

Water testing at Kathputli Colony indicated that fecal coliform was present at every water source. Fluoride was present in both the community water source and the public piped water. Despite being able to access water from diverse source, the residents

of Kathputli had little or no access to potable water as per the Indian Drinking Water Standards. This problem of contaminated piped water is not unique to Kathputli. In 2010, Hazards' Center tested the water at 24 low-income neighborhoods of Delhi and found only two sites where the water was potable. This highlights the fact that not only is the water-related infrastructure in the slums incomplete, but the existing water infrastructure is also damaged and unable to sustain the intermittent water supply system used in the city.

In Savda Ghevra, the Hazard's Center's analysis found that the tanker water—the only potable water available—has higher than permissible amount of fecal coliform. When I asked DJB officials about the quality of water in Savda Ghevra, they claimed that residents put dirty pipes into the tanker and sometimes children jump into the tanker, which affects the quality of water. During conversations with tanker drivers, I was told that due the fear of violence they don't leave the truck and this often results in bad water practices contaminating tanker water.

Inadequate water quality has significant consequences for both communities. Water borne diseases, such as diarrhea, dysentery, septicemia, gastro-intestinal infections, typhoid and jaundice were common. During conversations with dispensary employees and health care workers in Kathputli, I learned that diarrhea was one of the most common diseases affecting the residents. During interviews, approximately 80 percent of the respondents from both communities claimed that in the two weeks preceding the interview, at least one member of their family suffered from a gastro-intestinal infection.

It has been argued that women and children are more susceptible to these diseases due to more contact with non-potable water (UN, 2007). During the act of accessing and carrying water, women are exposed to risk of injury. They also serve as primary caretakers in the household, and the women I interviewed claimed that "if anyone in the household falls sick, they have to miss work to take care of their family."

Thus, I argue, in Delhi, the City's vision of water supply, management and distribution is based on a modern, rational and technical approach that attempts to emphasize and address only the water supply and demand gaps in the city. A deeper political agenda begins to emerge within the language of water policy and planning documents, and through the technical development strategies being used in the city's water sector. On the one hand, customer satisfaction, efficiency, and cost recovery are cited as key reasons for implementing strategies such as rationalization and augmentation of water supply. On the other hand, these strategies allow for the economization of Delhi's water supply, implicitly excluding many residents from the reformed water systems, and making room for the private sector in the city's water access, supply and management. Thus, as the urban poor are excluded from the writing of water related policy, they are similarly excluded from the implementation of these policies.

In New Delhi and other Indian cities, the implementation of ambiguous policies and plans reproduces unequal access to potable water and becomes a way to perpetuate processes that transform local spaces into exclusive compounds of wealth and poverty. Thus, access to water is critical in the creation of an elite class (Kaika, 2005) and in the

production of ‘bourgeoisie environmentalism’ (Baviskar, 2003) while the slums are sources of land and water pollution, and areas with little or no urbanity and civic sense (Batra, 2010). Through the double bind of legality and environment, compounds of poverty are being created and demolished, and water, with its links to cleanliness and modern, becomes a key tool with which the State maintains its control on land.

Ultimately, water access in contemporary Indian cities is tied to history, politics, ideologies, identities and space. In ignoring the complexities inherent in these processes, official plans and strategies suffer from a limited understanding of the everyday realities of water access processes in the city. This becomes clear when analyzing role of gender in water access processes for Delhi and other Indian cities. In the next two chapters, I will describe and analyze the water access strategies employed by women at my two research sites, and attempt to unpack the causes and implications of their strategies.

CHAPTER VII

Water Access Strategies of Women in Kathputli Colony

> As I stood on the outskirts of Kathputli, a man approached me asking me if I wanted a dog. His exact words were 'you want little puppy?' It took him pointing to a dog for me to understand that he was actually selling a puppy. I replied with '*nahi, shukriya'* (no thanks) and walked into the community. The next thing I saw was a person juggling in the middle of the street. Women, mostly with a *dupatta* around their heads, were bustling about in the 'main street', walking around the juggler, many holding water containers of different shapes, colors and sizes in their hands or on their heads. I could hear sounds of Hindi music and movies coming from various houses. Each narrow and crooked street seemed to be busy. I could see women washing clothes, cooking; men playing cards under a tree, and kids playing and running around in the streets. There was also an overwhelming jumble of smells – burning garbage, cooking food, and clogged sewers - a network of wires, crisscross trails of drains and a cacophony of noises. Kathputli seemed alive yet worn around the edges, lived-in yet somehow forgotten, strangely organized and extremely chaotic (Field notes, August, 12th 2009).

A small dusty road off the main highway opposite Shadipur Bus Depot, an old bus terminal in West Delhi, leads into the large jhuggi-jhopdi cluster[40] known as Kathputli Colony. I took the New Delhi Metro to Shadipur and walked along the dusty, busy street, avoiding the heavy traffic, towards 'Metro Pillar 253', which was the landmark where I had to turn left. As I walked towards Kathputli, the Delhi Metro thundered above me and rickshaw drivers followed me, asking me if I needed a ride. The

40 'Jhuggi Jhopdi Clusters' are the official terminology used by Delhi Development Authority. Currently there are 860 notified JJ Clusters in Delhi.

neighborhood was not visible from the street, but I had seen the haphazard collection of houses from the metro rail that runs just above the settlement.

As I entered Kathputli, I left behind the metro, the highway, and the sidewalks and walked into a very different landscape. Kathputli was a confusing network of narrow streets flanked by huts squeezed next to each other. There were signboards indicating certain businesses (such as musical instrument repair and electricians), shops selling food and tea, NGOs, and there were people everywhere. The smell of burning hair[41] forced me to walk as fast as I could to get away from the main street of the settlement. Before I knew it, I was out of Kathputli and in a formal middle-class neighborhood called Pandav Nagar. Again, the landscape changed. The streets were wider and paved, the wastewater infrastructure was hidden, and the smell of incense replaced the smell of burning hair.

Based on my first (and subsequent) encounters with the neighborhood, I will suggest in this chapter that Kathputli Colony simultaneously embodies and contradicts the development and modernization in Delhi. It emerges as the underbelly of the modern world-class, Delhi flanked on either side by the developed city, and it is also the space where modern political institutions, private sector, and civil society organizations converge. The tension and disconnection between the idea of formal rights and citizenship, the socio-political injustices that are encountered by the urban poor, and their everyday strategies to navigate these biases is palpable in Kathputli colony. I spent many

[41] I found out later that very near the main street, residents would burn garbage daily because no public garbage collection service was available at Kathputli and people did not want to walk to the nearest garbage dump.

months visiting this neighborhood on a regular basis as an observer and a participant observer. I also interviewed residents, local MCD officials, local DJB officials, and politicians working in the water sector in Kathputli. In my account of the neighborhood, I am attempting to relate and unpack the contradictions and similarities in perspectives and experiences that were narrated to me.

Kathputli was settled in the late 1960's, when artists, puppeteers and performers from the western Indian states of Rajasthan and Gujarat began to move to Delhi in search of employment. According to the residents of Kathputli, they were given their land to live on by Sanjay Gandhi. Sanjay Gandhi was the son of Indira Gandhi, who was the prime minister of India from 1966-1977 and 1980-1984. During the leadership of Indira Gandhi, Sanjay became involved in slum clearance and resettlement projects. According to the older residents of Kathputli, he was the one who notified their neighborhood and allowed the settlers to officially live in the area. This is a reason for pride, and for a sense of being 'official' among the residents. They informed me repeatedly that Sanjay Gandhi had settled them. Bhati, a Kathputli resident, explained this:

> **Bhati:** Sanjay Gandhi actually came to Kathputli to make sure we were OK here. *Amma*[42] was here then. Ask her, she will tell you. These officers, government people try to remove us even though a Gandhi settled us" (Personal Interview, May 5th, 2010).

The residents seemed to derive a sense of entitlement and right to their neighborhood not from their 50-years of tenure, but from a visit from a politician, specifically a Gandhi. This exemplifies the politics of identity and of poverty in Delhi.

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[42] Amma refers to an older lady and is also another word for mother.

The land Kathputli is settled on belongs to Delhi Development Authority (DDA). As people from Central, North, North East and West India moved to Kathputli during the past 50 years, each regional group has its own camp. There are approximately eight camps within the neighborhood, each named after the residents' home states. One of the camps is the Kodi colony or the leper colony, where people suffering form leprosy live. Most people from Kathputli avoid this neighborhood believing that the disease passes from touching each other. There is also a small group houses that belongs to garbage collectors that are not considered a part of the community because of their lower castes.

In a recent (and only) official population count in Kathputli, DDA estimated that there are 2,700 households. (However, local NGOs such as JEET and Kalakaar Trust, through unofficial counts, have found that there are approximately 3,500 households in Kathputli.) The original settlers live in the Kathputli camp, which constitutes approximately 70 percent of the households (1,700 households); the other camps include Marathi (550 households), Gujarati (350 households), Bihari (150 households), and a few smaller communities (Kalandar, Kodi (leper), Gilhera, Purvanchal – 250 households). The caste system is also clearly visible in the residential ordering of Kathputli. People belonging to the same caste live in proximity to one another; for example, artists live in the same block, the rag pickers live on the outskirts of the neighborhood, and the snake charmers and *madaaris* live in a separate block. The caste and region based fragmentation in Kathputli can also be seen in the way the local leadership is organized.

Community leaders or *pradhans* play a crucial role in the decision-making

processes for their blocks or camps. In Kathputli, pradhans are elected based on occupation, gender, and age. For all women's issues, including water, each community has an older female pradhan who acts as their spokesperson. However, all economic and political decisions are made by the male pradhans. The male pradhans also work with the local politicians.[43] Each pradhan seemed to have an explicit political affiliation. Currently, approximately 90 percent of the pradhans in Kathputli are aligned with the Congress Party, and work closely with the politicians to organize public meetings, rallies, and site visits. During election years, the local political candidates vigorously pursue pradhans because these community leaders are representatives of a large captive voting population. Following elections, however, they are of less importance to the politicians. Thus, during every election year, the residents of Kathputli (and other similar settlements) attempt to extract services, and favors from the politicians in exchange for votes. After the election, residents are unable to exercise much control over what services are available to them. The access to services thus is contingent on a system of political patronage (see e.g. Roy, 1999 and Chatterjee, 1986), and residents believe that the elected politician is responsible for providing them with access to all services. Diwali, an older resident of Kathputli, explained this relationship:

> **Diwali:** When she wanted to get elected, the *haathi* (elephant) party[44] candidate came and got taps installed here. She came and made all these speeches. But she was not trustworthy. We have seen them all come and go. We can

[43] A few female pradhans also work with politicians. In Kathputli, the two politically favored female community leaders I met were from minority communities and the head of their households due to the passing away of their husbands.

[44] The symbol for Bahujan Samaj Party is an elephant. Most residents were not aware of the name of political parties other than for Congress and BJP. They recognized the parties through their symbols.

> understand….understand everything. These people are *saalas, haraamis*.* When she lost, overnight, she had her men come and destroy the taps. Took them away. She said Kathputli people are disloyal and they don't deserve all this. Even that Vidya says that. But we are not. We were loyal. Sairam ji (current Member of Legislative Assembly) will take care of us. He has a lot of pull in the *sarkaar (government).* He will deal with all these jal board people also. He is big there. And all the rest, when elections come we'll see these people." (Personal Interview, March 3rd, 2010).

The simple certainty reflected in this statement indicates that residents construct a certain hierarchy of who is responsible for 'granting' them access to public services, such as water. The local politician is viewed as the agent of the people because he can be controlled, however tenuously, through votes every election cycle, whereas the state agencies are seen as impermeable and uncontrollable, except through the politician. The sense of empowerment is derived from the power of the politician. These hierarchies define the way residents in neighborhoods such as Kathputli imagine and navigate their rights to the city and its services. Thus, accessing resources such as water becomes a process of both confronting political and State strategies, and negotiating class, gender, and caste identities within the community and the city.

'TAPPING WATER': WATER COLLECTION SOURCES, STRATEGIES, AND CHALLENGES

Nirmala has lived in Kathputli for 45 years. She was born in the community and has never lived anywhere else. During an interview she mentioned that the water situation had improved greatly over the last twenty years. "There used to be no piped water in Kathputli, and residents went to the nearest police station where they bribed the policemen to collect even one bucket of water. Then, 20 years ago, Kathputli got its first tap. At least there is independence now (Nirmala, 2010; pers. int.). Over the last 10 years,

Kathputli residents have developed multiple sources and strategies to access water: a few homes have access to legal piped water, some buy water from private vendors, some have created their own water delivery system, some pay the local DJB employee to get water to their homes, and for most households, usually a female member walks to the public water collection point located approximately half a kilometer outside of the community.

Legal pipes: the 'official' system

There are approximately 50 households that can access public piped water in their homes (Figure 8). The access to piped water depends on the physical location within the community. The residents that are near the two tube-wells in Kathputli, or are located downhill from them, can access water at home for four hours a day (from 9am to 11am and 4pm to 6pm). Most women complain that the times of water delivery prevent them from being able to work and that they can't depend on this water because "sometimes it comes, and sometimes it doesn't". The women also indicated that the "water looks yellow in color, so we can't drink it, we use it for other things". The pipes that carry this water are old and damaged, and as they pass through the clogged drains or are exposed to the dusty streets, the water often gets contaminated. The pipes also accumulate dust and other contaminants through the day and when water intermittently rushes through the pipes, it carries all the pollutants with it to the point of access. Zehra (2000) found that no water delivered intermittently is safe to consume; indeed, in my own tests I found that the piped water in Kathputli is not potable because of its high levels of fecal coliform.

Most households that have access to the legal pipe system use motors because of

low water pressure. As a result, each subsequent house receives less and less water. Every morning, violent fights erupt between neighbors as they accuse each other of stealing water, adding another layer to water theft. Thus, caste and regional alliances around which Kathputli is organized are disrupted by water conflicts on a daily basis. People also complain that the pipes look as if they are made of *geela atta* (wet dough) and "if someone touches them they get holes" (Figure 9). Residents claimed that only 20 households are able to access water from the pipe system, and members of households with access to this water report that it is contaminated, insufficient and dependent on the whims of the tube-well operators. Thus, for homes not located within the immediate proximity of the tube-wells, access to legal piped water is currently not possible, and for those with access, it is neither sufficient nor dependable. The illegal or private water access sources and strategies have become critical for maintaining daily life in this community.

Figure 9: Potable water pipes in Kathputli Colony; photograph by Nishtha Mehta

Illegal pipes: the 'other' system

The Bihari Camp, located at the East edge of Kathputli, the closest to the main water pipe, created its own water distribution system eight years ago. Salma, who runs a small video game parlor out of her home, described the origin of this system:

> **Salma:** When we first moved here, sometimes the Kathputli people would not let us access water. We were Biharis, Muslim. That was the problem. We knew. They used to say all sorts of things. Then we decided that it was enough. We made our

> own system. We all contributed money and the men set up the system. We all have indoor water. We don't have any problem now. All those who used to say, we would live in filth. Bihari Camps is the cleanest. Kathputli. Is that clean? (Personal Interview, April 14, 2010).

Residents of Bihari Camp, partly because of their location, and partly because the settlement is less densely populated and people are financially better off, responded to the (perceived) discrimination in access to water by bypassing the normal sources. They pooled community resources and bought pipes that were attached to a main pipe, which was in turn attached illegally to the DJB pipe passing just outside the community. Mohammad Rehan, one of the planners of the system, said it cost a total of Rs 5000 per household, and if a household couldn't pay, the rest of the community helped. The newer households in Bihari are not always a part of the system, but most people help each other with water. Today the system is a source of great community pride. On my first day in Bihari Camp, Mohammad Rehan and Mohammad Sabri took me on a tour of the pipes, pointing out how they, and a few other men did this so that their women would not have to go out on what they consider the unsafe city streets to fetch water. Most women from Bihari either work as domestic help in nearby middle class neighborhoods, or work from home.

Figure 10: Unofficial Water Pipes of Bihari Camp; photograph by Nishtha Mehta

In each description of the system provided by residents, new critical issues began to emerge. The physical impact of consistent, reliable water access in the community is clearly visible in Bihari Camp. All the drains in the area have been covered to separate the wastewater from the water pipes the community is proud of. This allows for wider, cleaner streets (Figure 10). Women have more free time during the day, which, in Salma's words, "can be used for cleaning, taking care of children." However, here too, there is an emphasis on the domestic role of women in water access processes. Rehan's insistence that the system allows women to stay in their households and not be exposed to the city reflects a subtle disciplining of women: by limiting women's interactions with some unsafe city spaces, men are gendering these spaces as male. These gendered vulnerabilities are compounded by the tag of illegal attached to the water practices of the residents.

Before Rehan agreed to show the water distribution system to me, he asked several times whether "I was from the government". While this system has been working for the past eight years, the community is constantly aware of its illegality and vulnerability to being removed by State agents. And, with conversations to resettle Kathputli Colony is gaining in momentum, the Bihari community has become more aware of the insecurity of their water access. Thus, even with consistent and reliable water access, the residents continue to face the threat of the socio-political water crisis of the city.

Community water access source

The most frequented public water collection point for Kathputli residents is at a pipe carrying DJB water, located approximately half a kilometer from the main entry to the community. This is the same pipe that Bihari residents have used to create their distribution system. It supplies water to a nearby railway colony (across the train tracks from where residents access water) and pumping station. The people of Kathputli have punctured this pipe at two points and attach their own pipes to these holes to collect water. A second puncture became necessary when men started using the previous water collection point to bathe and would not allow the women to access it freely. Women also believed that the bathing was polluting the water. In 2009, with the help of a few men from the Bihari camp, the women of this community punctured the pipe at another point (20 yards away from the original puncture), and this became the main water collection point at Kathputli.

Most women tend to collect water at the same time every day and, as a result, an informal schedule has been developed to reduce the waiting times. However, on an average, women had to wait for at least 30 minutes every time they attempted to collect water. During summer months, and at certain times during the day (early mornings), women will sit by the collection point and wait up to two hours per trip (Figure 11 and 12). Once they fill their water containers, women have to bring the water home, which carries new challenges. There are cycle-rickshaws standing to carry water containers for women to the entry point of the neighborhood for Rs 5 (eight cents) (Figure 13). The streets are too narrow for the rickshaws to enter Kathputli, and women who do engage

rickshaws have to carry the water to their homes from the drop off point. This distance can be anything from 100 meters to half a kilometer. Most women said that they were unable to afford rickshaws daily and have to take approximately four trips each day to ensure that they have sufficient water for their families (Figure 14). The number of trips also depends on size of household, and the number of women in the family. If there are more women in the house, they say, "work involved in getting the water can be shared."

Figure 11: Main Water Collection Point for Kathputli Colony; photograph by Nishtha Mehta

Figure 12: Women Waiting to Collect Water at the Main Water Collection Point for Kathputli Colony; photograph by Nishtha Mehta.

Figure 13: Rickshaws Being Used to Transport Water in Kathputli Colony; photograph by Nishtha Mehta

Figure 14: Women Carrying Water from Collection Point to Households; photograph by Nishtha Mehta

While water in this system is free, women pay heavy economic costs in their

attempts to access it. The opportunity cost related to water accesses processes has been discussed in detail, with long water collection times often cited as the reason for women's inability to work (see e.g. Whittington, 1992, Lahiri-Dutt, 2006), and unpredictable water supply times seen as the cause for women's inability to have consistent employment (Zehra, 2000; Truelove, 2008; Whittington, 1992). During interviews women mentioned that their need to work during the day, and their desire to avoid men who stay by the water point became the key reasons for why they collected water during pre-dawn hours. Neema articulated this dilemma:

> **Neema:** I only work in the afternoon. I cook for a memsahib nearby. I go at 11.30, cook and then come back and cook for my family. She sometimes gives me water, if there is a shortage. But otherwise, I get it in the morning after 9 when the rush is gone. That is why I work in the afternoon. My daughter works in the factory. She can't get water and do that too. I wouldn't want her to spend all her time on this. We need her income. Also, all the Bihari men are there all the time, around the water point. What work do they have there, you tell me. I go. I don't let my daughter go. (Personal Conversation, February 23, 2010)

After hearing Neema's story, and similar stories narrated by more women from Kathputli, I began to talk to the men standing near the water collection point. During our initial conversations, all the men I spoke to reported that they were simply trying to help women with the more difficult tasks, such as carrying heavy containers. Finally, on August 8th, 2009, I began to understand their role in the water access process better. That day, the line for water at the tap was much longer that normal. It appeared that the informal system of water collection somehow shifted overnight. Heera explained this dramatic difference:

> **Heera:** One of the women told me I was 'characterless and greedy' because I was filling too many buckets. He (Abbas) was so angry about what the women said to me, so so angry. He shut the system down. He said no one can get water from here. No one got any water yesterday, Didi. He just said, if someone troubles me, he will not let them get any water. The woman came and apologized to me today and I told Abbas, now at least open it. (Personal Interview, April 5th, 2010).

Heera's story, told with simple pride, indicated that Abbas controlled the main source of water access for Kathputli colony. This was my first introduction to the group of men who could always be seen around the water collection point: the notorious 'water mafia.'[45] I spent some time talking to Abbas about his role in water access and was surprised to learn that his family did not collect water form this particular source. "We have our own system. We built it years ago." He explained that they don't charge people for water access at this point and were only trying to help the women. The men 'assisted' the women with attaching pipes to the puncture, with lifting their water containers onto rickshaws, and with organizing the water collection lines. Some of the women indicated that they appreciated the help, and others complained that they felt uncomfortable with so many around them.

The disjuncture between the men's idea of helping the women, and the women's

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[45] Water Mafia is 'water vendors that sell water at much higher prices' (Rajesh 2000). Kennedy (2007) discusses the role of Water Mafia in Delhi such that water is stolen from reservoirs forcing residents to buy high-priced water from the 'mafia'. Kennedy found that these Mafia have political ties and send pay offs to key politicians. In the context of Kathputli, I am using the term to refer to the group of approximately 12-15 men who controlled the main public water access point. These men, mostly all out of work, were between ages of 25-30 and, often, in response to some personal slight, refused some women access to water. The men were mostly Muslim residents of Bihari Camp. These gendered issues of control and access were consistently emphasized as religious conflicts in the community. Based on both Kennedy and Rajesh's analysis of water mafia, it is an organization that *controls* and sells water to residents. While I am not defining 'water mafia' in this traditional sense - because the men were not 'charging' women for accessing the water, their organized control over the only viable water source for many women in Kathputli became the reason I began to see them as the local 'water mafia'.

narratives of feeling uncomfortable around these men, speaks to the gender identities that emerge around water access in Kathputli. In the feminized space of water collection, men retain the dominant and controlling position, while the women negotiate the difference in power as they attempt to access water. While women claim the natural water, men control the infrastructure and technology of water production and distribution (pipes, rickshaws, maintaining the puncture, etc.) even at this scale. As men help the women navigate the modern aspects of water, gender constructions become a critical part of the water access processes at the level of the community. This particular water access strategy in Kathputli charts how women negotiate State's binary categories of legal/illegal, while also bargaining with the men to claim modern water. Thus, I argue, that water access processes constantly produce gender relations, where women inhabit subordinate and subservient roles. This can be seen in other water collection strategies employed in Kathputli, as well.

Hand pumps

Some years ago, DJB provided a few hand-pumps to improve water access for Kathputli residents. However, the location of the hand-pumps was not decided with the community; rather, residents were simply informed where the infrastructure would be placed. As a result of this failure in participation, conflicts arose. In the words of Diwali:

> **Diwali:** The fighting began outside. Women closest to the hand-pump said it is ours, and wouldn't let other access water from it. There were fights. People would scream, hit. Then finally some women just took the hand-pumps into their homes. They became personal hand-pumps rather than community but nobody stopped it. Now there are some who have personal hand-pumps, and other who have no

water (March 20th, 2010).

The DJB engineers repeatedly told me about the fighting brought on by the hand-pumps, insisting that it shows how residents are unable to understand the meaning of a community resource. The engineers characterized slum residents as unable to use and manage technology, while simultaneously referring to himself and his colleagues as generous State agents who are attempting to create a world-class city, while also doing the 'best they can'. These words resonate with the discursive use of modernity and development in State documents analyzed in Chapter V. The politics and conflicts surrounding the hand-pumps in Kathputli thus highlight the relationships between residents and State agents, but also illustrate the gendered relationships around water in the community.

In most households with personal hand-pumps, men would speak of the costs associated with it – the cost of pumps, motors, pipes - while women would talk about how the water is sometimes sweet and other times tastes and smells bad. In these interactions with water, certain gender roles within the household are (re)produced: while men are in charge of the economic side of decision-making, women assume the role as the household water-manager. These roles, however, are disrupted in female-headed households, or when women attempt to buy water from private sources and pursue other strategies. This became clear when, during a focus group with eight women, a male resident of Kathputli who was observing our meeting from his doorway, began to tell me his story related to community hand-pumps:

> **Man:** They were like animals. Fought and fought. These women abused like men. I was happy to see those hand pumps go away. They do this at the community point too, but at least I don't have to see it…hear it (March 22, 2010).

After his interruption, the women became quiet for a while. Finally some of them spoke up, insisting that "he was making it up and that there were fights but not like he was describing." The man, in talking to me during my conversation with the women, altered the space of interaction of our focus group. He reinforced the man/woman binary by bringing up 'male actions' – such as abusing - that women were not supposed to engage in. By reminding the women of their departure from a constructed femaleness he also forced them to become defensive of their violent interactions with water. His unsolicited commentary clearly indicates that during interactions with water, man/woman binaries are occasionally disrupted and gender is constantly reinterpreted. This can also be seen as women from Kathputli attempt to buy or borrow water.

Buying or Borrowing Water

Many women from Kathputli work as cooks, cleaners and nannies, and they use their connections with middle and upper-middle class residents to meet any unfilled water needs. This allows them to combine water access and employment. Neema mentioned that she often gets water from her *memsaab*[46] to meet her daily needs. Prema, another Kathputli resident who works as domestic help in a nearby middle class neighborhood, said about her interaction with her employer: "Didi[47] is really nice. She knows we have

[46] Memsaab or memsahib was used in colonial India to refer to European women, and now is used to refer to women from upper socio-economic classes (mem = English lady, sahib = sir).

[47] Didi refers to an older sister.

water problems. She herself told me, ‘Prema if you want water, take it’. People are not always so nice.”

What is striking about Prema’s experiences of borrowing water from her didi or Neema’s from her memsahib is not simply their innovative attempts at finding alternate water sources, or the mobility of the women from Kathputli, but also the (re) production of class-based gender relations within water access processes. ‘Didi’ and ‘memsahib’ – both middle class women - were placed in roles of water givers, attempting to help the women from Kathputli. However, in this system of patronage, the unequal access to water continues to be emphasized, not only at the scale of the community but also at the level of the city. Women living in communities adjacent to the slum have access to enough water that they can share it, whereas the women from Kathputli have no ownership of water and continue to rely on an inconsistent source.

The women with access to middle class households mentioned that they fill buckets for their employers and help store water for them in their homes, indicating a co-dependence of water practices between the middle class women and the women from Kathputli. However, only urban poor women with access to middle-class households are able benefit from this system. Thus, water access in Kathputli Colony can be seen as deeply gendered, class-based, spatially differentiated, and connected to the mobility of the women (Truelove, 2008). Through these insecure water access processes, urban poor women are forced to negotiate their gender roles within the household, community and the city, even as they are seen as fulfilling traditional domestic roles of accessing and

managing water for their households (and for middle class households). As Neema clearly articulated: “It (water) is not mine, if she says no or he says no, I’ll just have to find another way.”

The other way often becomes buying water from private sources. These sources, usually owned by men, further indicate how access and control of water is deeply entangled in everyday gendered practices. In Kathputli, some water-seller men *(paani wallahs)* fill containers of water from the community bathroom and sell them to residents for Rs. 5 each. Packets of water are also sold at the local grocery store for Re. 1. Here, again, the men control water--the economic good---selling it door to door, until it enters the feminized household spaces and is seen as an everyday need. The ability (or inability) to pay water vendors reproduces gender and class identities, and also places water access processes at the center of power relationships that reproduce male/female spaces and practices related to water.

While in places like Kathputli, the relationships between slums and the State, between slum residents and middle class city residents, and between the slum dwellers themselves constantly shift between disregard, cooperation, and confrontation, these relationships become rigid and static in the planned spaces of resettlement colonies. In the following chapter, I will analyze the water collection strategies of women from Savda Ghevra and attempt to unpack the gendered relationship being produced around water between residents of a planned resettlement colony and the State.

CHAPTER VIII

Analyzing Women's Water Access Strategies in Savda Ghevra

> It took me 2 hours – a ride on the metro, two bus rides, a rickshaw, and a mile long walk – to reach Savda Ghevra. It didn't seem like Delhi. All the way there, I kept wondering - how will I get back, and that I must leave on time so I am stuck there at night. All day, Savda's distance from 'Delhi' made me feel like I could get trapped there. (Field Notes, January 2010).

After long rides on the metro, the bus, and a rickshaw, when I finally entered Savda Ghevra I faced wide, clean roads, streetlights, and open spaces. It was a landscape unlike any that I had seen in Delhi. It didn't look like a slum, but it also didn't look like a lived-in community. No one was out on the wide streets, the school compound was vacant, a few shops selling *paan*, *beedi* and *chooran*[48] were open but had almost no customers and other shops selling construction materials and mobile phones had closed metal shutters. The dusty, open streets were lined with brick, concrete, and some canvas and tarp homes. Some were painted brightly, and several had two folded hands on the doorway, a sign of greeting in India. The houses all seemed to be built on a grid, except the few temporary homes constructed at the side of the roads. I saw boards claiming that a particular plot of land was a 'park' but the space was surrounded by thick, grey concrete and I couldn't actually see the parks. Around the neighborhood, though, I could

48 Paan is made with betel leaf, slaked lime paste and a brown powder paste. It is commonly used as a palate cleanser and breath freshener in India. Beedi is a thin local cigarette and chooran is a sweet and/or sour digestive aid.

see agriculture fields and open spaces. The owners of these fields lived in the villages that surround the neighborhood, including Savda *gaon*[49] and Ghevra *gaon*, from which Savda Ghevra, a planned (peri) urban neighborhood, draws its name.

As with Kathputli Colony, Savda Ghevra both embodies and contradicts the development and modernization of Delhi, albeit in dramatically different ways. While unplanned Kathputli grew informally within modern Delhi, Savda Ghevra *is* the planned city, but surrounded by the 'unmodern' villages. In Kathputli, residents who have lived in the neighborhood for 30 years, do not have legal rights to land and to public services, and are forced to negotiate state-sanctioned policies using informal networks and connections to meet their everyday needs. In planned Savda Ghevra, the poor encounter social injustices despite their supposed access to legal and formal rights. The absence of state agencies, limited access to public services, and the lack of any informal networks, force Savda Ghevra's residents to depend heavily on NGO intervention to meet their daily needs.

In my account of Savda Ghevra, I am attempting to analyze the implications of the transformation of former slum residents to legal citizens of New Delhi (who have ostensibly been provided with access to public water), even as they are violently and visibly excluded from the world-class city. I am also attempting to analyze how, or if, the tag of legal and having access to planned spaces changes the residents' encounters with state agencies around water access, and if there is an accompanying shift in the attitudes

49 Gaon is the word for 'village'.

of government agents towards the residents of resettlement colonies. I am attempting to understand if planning, as exercised in New Delhi's water sector, is actually benefitting the low-income residents of the city. I will begin by discussing the demographic characteristics and community leadership within Savda Ghevra. In the next section I will review the water collection strategies used by the women of Savda Ghevra. Unlike Kathputli Colony, where women used multiple sources to meet their daily water needs, women from Savda Ghevra have access to only a single water source – public tankers. Finally, I will argue that this homogenization of water supply, resulting from official planning strategies to control informal access to land (and water), causes more problems for women.

Savda Ghevra is a 250-acre resettlement colony situated 40 KM west of Delhi's center. Delhi Development Authority began planning for Savda Ghevra in 2003. Agricultural land was acquired, subdivided and, finally, in 2006, people were moved to this planned neighborhood. Savda Ghevra continues to be surrounded by fields and small villages. Currently, there are approximately 8000 families from slums of North, West and Central Delhi living in this neighborhood. When developed fully, this area is expected to house 20,000 families, making it the largest planned resettlement colony of Delhi. Eligible families who settled in Delhi before 1990 were given plots of 18 sq. m, while families who moved to the city between 1990 and 1998 were allocated 12.5 sq. m plots for a seven-year lease. Currently, 54 percent of Savda Ghevra's population is male, and approximately 61 percent are between the ages of 7 and 35. Scheduled Castes, Tribes and Backward Classes constitute approximately 60 percent of the population. Savda Ghevra

residents are predominantly Hindu (72 percent), however there are at least 26 percent Muslim residents.

Unlike Kathputli, where residents choose to live together according to their religious, regional and occupational connections, Savda Ghevra's organization prevents a similar choice for residents. People are allotted plots based on tenure, and are bound to that particular piece of land. Savda Ghevra has been sub-divided into 12 housing blocks, and in most cases, residents that were previously living in the same community have been moved into different blocks. This shuffling of neighborhoods as a part of resettlement causes the fracturing of existing communities, which affects how people access public services and use the existing infrastructure, which, in the case of Savda Ghevra, is extremely inadequate.

The relocation to Savda Ghevra also saw shifts in employment status and commute time for residents. Approximately 33 percent of the population works as daily-wage workers, and approximately 90 percent return to their old neighborhood for work (CURE, 2008). In a focus group conducted by CURE in 2008, residents complained that in the new location they were unable to use their skills to access employment due to lack of references and opportunities, forcing them into jobs that paid less and were exploitative. The lower income also detrimentally affects access to housing and 55 percent of the population lives in *kuchcha* houses.[50] Currently, only 3.8 percent families have access to toilets in their homes and another 0.5 percent has built temporary toilets.

[50] *Kachcha* houses are when both walls and roof are temporary in nature. *Pucca* houses are where both roofs and walls are made of permanent materials (RCC, Brick and Cement).

There are nine community toilets in Savda Ghevra, but none of these are currently operational. Only eight percent of the population is using MCD's community toilets and at least 88 percent people defecate in the open. Savda Ghevra lacks adequate housing, sanitation facilities, and other infrastructural amenities.

Electricity is currently supplied to approximately 60 percent of the households through a private company, the New Delhi Power Limited (NDPL). Residents indicated that NDPL often bills them for several months together, and they find it difficult to pay their dues, leading to suspension of service. Even though 40 percent of the homes in Savda Ghevra are not connected to the official power network, only three percent of the houses are accessing electricity by illegally tapping into the grid. In Kathputli, even though most homes are not connected to the city's power grip, through informal tapping most houses in the neighborhood have access to electricity (CURE, 2010). This indicates that the available infrastructure in Savda Ghevra is inefficiently planned and managed and is unable to respond to the needs of the residents. In Kathputli Colony, on the other hand, if residents do not have access to officially supplied electricity, they simply find ways to steal it through tapping, informally addressing needs left unmet by planning strategies. This indicates that in places such as Savda Ghevra planning strategies lead to the fracturing of informal networks that are vital for residents of low-income communities, such as Kathputli Colony. In this way, official planning strategies in Savda Ghevra have failed to meet housing, transportation, employment, power and water needs of the residents. The arbitrary relocation of residents into different blocks has also ruptured the community fabric, and created a fragmented neighborhood with no clear

leadership structure.

Each slum that was moved to Savda Ghevra had two to three pradhans or leaders with different political connections, religious affiliations and specific community roles. In this new community, these leaders have been rendered defunct. Ishwar Pradhan, who was relocated to Savda Ghevra from Nangla Machi, a slum in central New Delhi, articulated this shift:

> **Ishwar:** I knew everyone there (in my old community). Politicians. I went to their homes. They came to me. I have nothing here. No job. Nothing. I am sitting at home like a woman. There is Arif Pradhan also here, who talks big but doesn't do anything. We are unable to do much here (Personal Interview, June 10th, 2010).

My initial requests to talk with Ishwar had been consistently refused by his wife, who insisted that he was busy, asleep, or at work. I later discovered that after the resettlement, Ishwar was unable to find work except as a daily wage laborer in the nearby farms, and in an attempt to keep this situation from other residents, his wife had been preventing people from speaking with him. Prita, a former Nangla Machi resident, complained, "we can't ask for help here, no one knows better. Even the *pradhans* are clueless". A female pradhan indicated that since the resettlement, she has been working to form a women's group (mahila mandal). But establishing such groups is only possible through the assistance of NGOs, because "the government is absent here"[51]. Arif commented on how (the lack of) political patronage adds to the powerlessness of the community leaders:

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[51] Ishwar's words were 'sarkaar yaha hai nai'

> **Arif:** Politicians listen to villagers because they are more in number. But when Savda is settled, that will change. We'll have bigger numbers. Politicians here rule, there is no democracy so community leaders don't matter. *Raajtantra hai, prajatantra nahi* (it's a ruler's rule not a democracy). (Personal Interview, June 12th, 2010)

Sukhram, another pradhan, corroborated Arif's statement:

> **Sukhram:** I earlier worked with Congress, now I am sidelined. Politicians, except one or two, don't give any money for projects. Everyone works for the villagers because they are 34,000 right now. More votes. This will change. Then they will work with us. But there is not a lot of unity in community right now. In a few years, Savda will be different. If the *sarkaar*[52] wanted, we could have that now. But no one cares. (Personal Interview, June 12th, 2010)

The shifts in Ishwar's, Arif's and Sukhram's lives before and after resettlement, and Prema's complaints regarding the lack of information and changes in hierarchy, indicate a violent disruption in the informal and formal decision making systems that existed in their previous home communities. Marris (1974) describes slum clearances as a shock where people are forced to transform overnight, and this sense of disorientation is common in the narratives of Savda Ghevra's residents. This is extremely different from the situation in Kathputli Colony where, despite their informality, the slum residents have developed strong social and political networks through which they meet their daily needs.

As with Kathputli Colony, the people of Savda Ghevra also derive their sense of agency from local politicians. One of the greatest losses caused by their relocation, as articulated by all community leaders, is the loss of political patronage. They repeatedly argued that when their numbers increase and they control the elections in the area, their neighborhood would change. Residents view their ability to choose a political leader as

[52] sarkaar is 'government'

the key to control access to resources, projects and legitimacy. In Kathputli, residents rely on the local political networks. Most residents are aware of how to reach their local MLA and frequently use the influence of local politicians searching for electoral victories to access services such as electricity and water. Gauri, a resident resettled from Khan Market, a central New Delhi slum, to Savda Ghevra in 2008, talked about this transition from an unplanned to a planned colony:

> **Gauri:** Earlier, there were problems but we had water, food, homes, jobs. If there were issues, we had ways to deal with them. We knew politicians. We had a system. It worked for 20 years. Here, we have nothing. I was in Khan Market; I went to India Gate for a walk. Here my brothers won't even let me out of the house other than for the tanker or for ration. This house is a coffin of 12.5 yard (100 sqft). (Personal Interview, May 24th, 2010)

Gauri's words of frustration, and a sign outside Savda Ghevra announcing that the resettlement colony was overseen by the MCD – Slum and JJ Wing, indicate that even though I was in a 'planned' space, it was still seen as and managed as a slum. While the state continues to categorize Savda Ghevra as a slum, the informal socio-political networks that facilitate life in slum communities such as Kathputli are absent, thus making life harder for residents. This becomes especially clear as I analyzed the water collection strategies of the women from Savda Ghevra.

WATER COLLECTION CHALLENGES IN SAVDA GHEVRA

At the time when it was first settled, Savda Ghevra had no planned or built in water pipe network. According to a DJB engineer, because of the lack of coordination between the various state agencies, including DDA, MCD, and DJB, it was only after residents began to move to Savda Ghevra that the Delhi Government asked DJB to

supply water. The missing infrastructure forced DJB to supply potable water through tankers, even though tankers are not considered an improved water source (UN, 2010). The MCD Slum Wing has provided 23 community hand pumps and people have installed private pumps to meet their water needs. However, DJB found that the ground water in Savda Ghevra is brackish at all levels and is non-potable, thus people are solely dependent on water tankers for their potable water needs. Now, five years after the initial wave of resettlement, there are still no plans to provide piped water or any water infrastructure for this community and potable water continues to be available only through tankers (CURE, 2010). Figure 15 indicates the use of different water source in Savda Ghevra, clearly depicting the dependence on DJB tankers and illustrating the difference from Kathputli, where women use diverse water collection strategies to meet everyday needs.

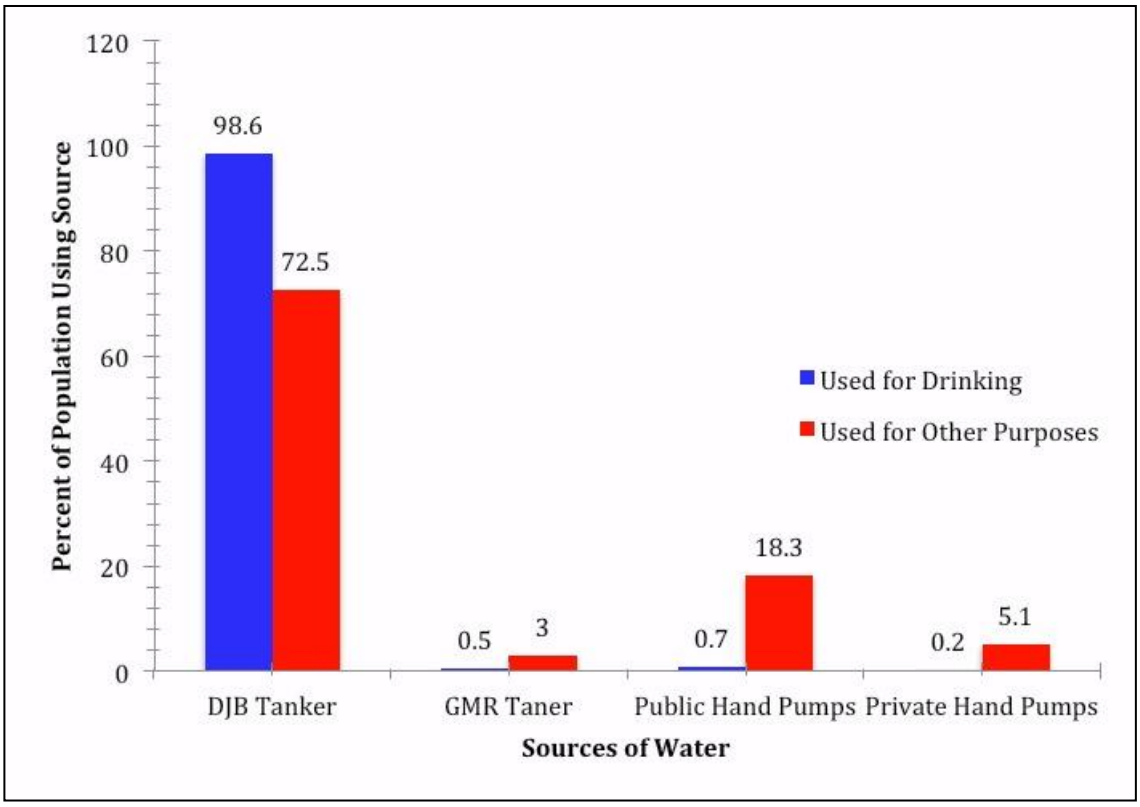

Figure 15: Use of Water Sources in Savda Ghevra; Source: CURE (2008).

Currently, the residents have no control over when the water tanker reaches Savda Ghevra, whether it actually arrives at its regularly scheduled time, whether it stops at its designated location, and whether it carries sufficient water every day. Residents, with the help of CURE, negotiated with DJB to arrange for tankers to arrive at specific times and locations for different blocks, for example in Block B, the tanker is supposed to arrive at 11AM on the main street; however, tankers are often late or parked in different locations increasing the residents' insecurities regarding water access.

Figure 16: Accessing Tanker Water in Savda Ghevra; photograph by: Nishtha Mehta

The inflexibility, unpredictability and unaccountability of a single potable water source render water collection a severely contentious activity. In most homes, water containers are placed at the entrance of the house, ready to be picked up as soon as the tanker arrives. Even in the hot summer months from May to August, women sit outside in the sunbaked, dusty streets of Savda Ghevra, sweating as they wait for the tanker. Tankers reach different blocks at different times between 10AM and 4PM, usually the hottest period of the day, making it hard for women to take multiple trips while carrying heavy containers of water. Several times, even before the tanker arrives, fights break out as women from the whole block begin to congregate near the homes closest to the

tanker's arrival location and the residents of those homes ask them to stay further away. As soon as the tanker is seen, calls of 'it's arrived' can be heard down the street, and women and children (and some men) run with their buckets, cans, and pots to collect water. Within seconds of its arrival, a crowd gathers around the tanker and cries of 'leave it', 'give the pipe' 'fill mine' can be heard as everyone attempts to grab the water pipe. Most women attempt to fill as many containers as possible and then carry the filled container back home in several trips. If women have help, from a child or from their husband, fewer trips are needed. As the tanker water starts to finish, those who have managed to collect enough begin to walk away, and the crowd thins. Those who haven't collected enough water begin a desperate fight with their neighbors to fill as many containers in the last minute as possible. Harsh, violent words and the sound of scuffles are clearly audible. Because women are under so much pressure to get enough water at just this one spot at this one time, they feel desperate. They jostle and struggle to get to the water, which in turn raises tempers and leads to abusive arguments and physical fights. Many women complained of bruises on their arms, legs and backs, and of injured feet and hands after collecting water from the tanker. As the tanker leaves, the streets of Savda Ghevra turn quiet again.

Anu, a resettled resident from the Khan Market slum, which was located in central New Delhi, was injured during one of her attempts to collect water. She explains the contentious water collection process thus:

> **Anu:** I fell, but people just ran over me. No one stops. Who knows when it (tanker) will come next? It is better now but we always worry. Without water, food is also

> difficult. Men also come and get water. People touch you, push you. What to do? We have to run our homes even in this (Personal Interview, April, 18th, 2010).

Anu's brother was in the same room when I was speaking with her, and was listening intently to our conversation. After Anu spoke, he quickly interjected with a look of frustration and disgust on his face: "these women become animals when the tanker comes. I am scared of her." Anu's reaction to her brother's comment was to laugh and insist that "it had to be done". Still, his comments reflect the profound gendering of water access in Savda Ghevra, as well as in Kathputli Colony. While Anu's brother was attempting to tease his sister, the 'women become animals' remark was strikingly similar to the comments made by one of the male residents of Kathputli. It indicates that the desperate aggression in attempting to access water is seen as a non-human (non-female) trait. The only way to justify women's role in this is by seeing it as necessary to meet their domestic duties ('we have to run our homes'). Anu's brother's fear (I am scared of her) indicates that as men and women attempt to access water at the tanker, gender roles shift. Imran, a man resettled at Savda Ghevra from Nizammudin area in central New Delhi, insisted that "respectable people do not run to get water from tankers, especially the women", and his wife argued that "my children will not drink the yellow hand-pump water, I don't have an option." Here, I argue, the limits on available water causes women to expand and break certain gender roles. While men don't physically stop women from collecting water, both men and women use the language of tradition and household duty to continue de-emphasizing the way gender roles shift during water collection during interactions with legal and illegal water access processes in Savda Ghevra and Kathputli colony respectively.

Figure 17: Men Watch as Women Collect Water from Tanker; photograph by: Nishtha Mehta

The gender roles are also reinforced in other ways. One or two men not involved in water collection would occasionally stand near the tankers while others would watch from their homes or from further down the street. This way, the women attempting to collect water are constantly observed (Figure 17). Imran explained that by being around the tanker he can "make sure that no one misbehaves with his wife." Several other men I spoke with echoed his statement. The presence of men at the tanker site depended on the men's employment status and what time of the day the tanker would arrive. But, as with the water mafia in Kathputli, men from Savda Ghevra, such as Imran, change the

feminized spaces of water collection to spaces of male control and surveillance. This surveillance is easier and more complete in Kathputli Colony because the water collection is regular, and involves women spending more time at the same location every day. Thus, I argue that both legal (Savda Ghevra) and illegal (Kathputli) water access process are thoroughly gendered. And, even though the women's actions as they access this legaland illegal water challenge traditional gender roles, their actions do not cause the gender roles to shift permanently due to constant surveillance and control by men and the state.

Thus residents of Savda Ghevra rely on a legal and hence legitimate source of water, provided free of cost by the benevolent State through a system of water tankers. This system is supposedly an example of modernity and an outcome of the technicist/rational planning in New Delhi. However, everyday experiences of women tell another story. This source of water is unreliable, the water is contaminated, and because of the limits and unpredictability of the tankers, women face conflicts, surveillance, and enforcement of gender roles.

On the other hand, ironically, in the unplanned slum of Kathputli where the city has not planned for and provided water, residents have developed numerous, alternate systems that respond to their lack of access to public water. This makes it easier for women because they can use multiple sources, and can collect water at different times during the day. Women's water access strategies are governed by complex socio-political systems - the water mafia, paani-wallahs, NGOs, middle-men, community leaders - that

control water access processes in the 'unplanned slum'. In Savda Ghevra, all residents are dependent on public tankers, which are unreliable. And there's a less developed, less complex social system around water in Savda Ghevra, in great part due to the lack of leaders, the spatialization of the residents (not living together based on home community/religion), lack of time because of commuting, availability of water for only half hour a day, limited knowledge of local politicians, and lack of access to state agencies. This indicates that women have fewer options to circumvent the system and fewer sources of help if they are unable to access the tanker.

Ultimately, we are seeing an inversion of formality in Savda Ghevra and in other resettlement colonies. While state agencies imagine resettlement colonies as a formal part of the city, the residents, who are unable to access water (and other resources) in these neighborhoods, have greater access to the formal state networks in their previous informal slum settlements. Therefore, planning is failing to improve, specifically women's access to water, and more broadly, the quality of life for the low-income residents of New Delhi. Due to the absence of state agencies and failure of planning strategies, residents negotiate their access to public resources such as water through other private and civil society agents, in particular NGOs.

ROLE OF NON-GOVERNMENTAL AGENCIES IN SAVDA GHEVRA

It is argued that NGOs fill the void left by the public sector when it is unable meet the needs of residents. NGOs are seen as an important alternative to the bureaucratic, rigid and ineffective state (Fisher, 1997; Edwards and Hulme 1996a, Fowler 1991). The complicated and historically mistrustful relationship between urban poor residents and the State produces the space in which NGOs operate (Edwards and Hulme, 1996a, Fisher, 1997; Ndegwa S, 1996). Thus, in a place such as Savda Ghevra where the state has abdicated responsibility for providing food, livelihood, and adequate and reliable potable water, the role of NGOs becomes critical, and their relationships with State agencies and with residents of the community become complex.

There is a diverse group of NGOs working in Savda Ghevra on issues related to education, food provision, livelihood, transportation, and water and sanitation access. Asha, Young Men's Christian Association of New Delhi (YMCA), Multiple Action Research Group (MARG), Child Survival India (CSI), and Center for Urban and Regional Excellence (CURE) are some of the key organizations working in this neighborhood. At least three organizations are working on water related issues, such as improving access to potable water, providing information on how to filter water, and providing a bridge between municipalities and residents. Due to absence of the state, NGOs are often forced to partner with public agencies and take on the role of producer for certain services, such as building toilet blocks, compost pits, managing public parks, and providing medical treatment. Thus, in their new role as agents of state (Zerah, 2010,

p162), NGOs shift from their historic role as simply a source of information and support to communities (Zehra, 2010).

Indeed, in Savda Ghevra, NGOs are often viewed as a part of the state. Residents who are unable to access municipal agencies view NGOs as the only accessible part of the public sector. This interchangeability between NGOs and public agencies in the eyes of the residents emphasizes how people may be deriving their rights to access the city's resources from these organizations, as opposed to Kathputli Colony, where local political leaders are assigned this role. The absent state, currently apathetic local politicians, and fractured community leadership as a result of resettlement create a very political role for NGOs. Thus, even as the resettlement colonies remain outwardly formal, the complex relationships between NGOs, state and residents contribute to the process of informalization of the community, such that residents continue to depend on NGOs to act as liaisons between them and the government agencies, increasing the distance low-income communities and the state. For Savda Ghevra, this complexity and its consequences are visible through the work of one NGO in the community, the Center for Urban and Regional Excellence (CURE).

CURE works with poor communities and with local governments on policy reforms, improved access to basic services, and inclusive and participatory governance (CURE, 2010). The NGO works specifically with women and youth, and partners with all levels of government – national, state and local--on issues related to water, sanitation, power, education, livelihood, health care, and housing (CURE, 2010). In Savda Ghevra,

CURE partnered with the public agencies to develop the Sanjha Prayas (working together) initiative, which focuses, in particular, on improving access to potable water.

By establishing an on-site office in Savda Ghevra and having regular staff within the community, CURE has become one of the key sources of information and grievance redress for the people of Savda Ghevra. Residents walk into the local office of the organization looking for work, food, housing and potable water. CURE also works with residents to make water collection easier. For example, facilitators from CURE have conducted focus groups to determine the preferred locations for tanker stops and most convenient water collection times. While this has not addressed the water access problems in Savda Ghevra, it has allowed the residents to have some say in when and where the tanker arrives for their block.

CURE's entry into Savda Ghevra occurred at the moment of disconnect between the urban poor and the fractured state, and the work of the organization is critical to the provision of basic services in the community. CURE and other NGOs in Savda Ghevra are attempting to ensure adequate access to potable water for residents. For example, CURE employees have access to contact information for local technicians, political leaders and municipal counselors. Residents can explain their problems to CURE workers, who then get in touch with the appropriate authority to address these issues. However, although CURE thus plays a vital role in forming a bridge between residents and the state agencies, an unintended/ironic consequence of the work of this and other NGOs is that they serve as the *only* link between the residents of Savda Ghevra and the

state. This promotes continued passivity on part of residents and continued absence of the state. Thus, as residents become dependent on NGOs, they do not mobilize or resist state programs, and the process of informalization in resettlement colonies continues. In this way, NGOs unwittingly are contributing to the disjunctive governance at the planned periphery of the city.

CORRUPTION

Ironically, corruption also works differently because of the absence of the state. Earlier in this chapter, I have analyzed how illegal water sources are a critical part of access processes in Delhi. Among the many reasons why these informal systems thrive in Delhi, corruption is one of the most pervasive and commonly accepted. In 1965, the Indian Institute of Public Administration conducted a study to understand citizens' experiences in getting water connections and analyzed corruption in Delhi's water sector. Borrowing from Santhanam Committee's report[53], this study defined corruption in the water sector as "a complex problem, with roots and ramifications in society as a whole. Corruption includes an improper or selfish exercise of power and influence attached to public office or to the special position one occupies in public life" (2).

The 1965 study sampled approximately 150 residents of Delhi to understand their experiences in getting water connections, and found that at least 90 percent of the respondents had encountered corrupt officials, technicians and government employees. The report indicated that corruption was either a result of "inadequate remuneration" or a

[53] The Santhanam Committee on Corruption was established in 1963 to investigate and suggest solutions for issues related to governmental corruption in post-independence India.

"lack of character" (23). During interviews conducted by investigators, it was found that most officials believed these reports to be exaggerated and other technicians and employees believed that that corruption came form above. Davis (2004) found that corruption remained the least confronted and most common problem within Delhi's water sector. Payments are made to State agents to expedite connection applications, falsify meter readings, to conduct repair work, and to ignore illegal connections. Davis found that exchanges of bribes between residents and State employees are a part of the everyday practices within the water sector. Thus, residents unable to pay money to officials often have to spend long hours in attempting to address their water problems. The state employees too are equally affected by this system, and as much as they rely on bribes to supplement their livelihoods, they also have to make similar extralegal payments elsewhere (Davis, 2004). During my fieldwork at both Kathputli Colony and Savda Ghevra, I repeatedly encountered the pervasive and blatant corruption. However, in Kathputli these networks was used by women to improve their access to water, and in the planned environs of Savda Ghevra the lack of local informal networks further worsens women's access to water.

In Kathputli Colony, Neema first introduced me to Balinder, a private contractor with DJB, who was responsible for overseeing the water delivery. Neema had purchased a pump through him to access water in her house but, a few months after installation, the tap had dried up. I accompanied her as she attempted to understand why the pump was not working. Balinder had taken 1500 Rs (33$) from her earlier, and told her that she would need to pay 1000 Rs ($22) to get water again. Neema, after a brief argument, told

him to come take the money from her later. Later, when I asked her why she paid him, she said it saved her and her daughter some time and allowed them to work. The water she was paying for was not potable, but it used for bathing, cleaning and washing. The stories of paying Balinder for motors, or paying other DJB employees to access water were common in Kathputli. Balinder articulated his contentious relationship with the residents:

> **Balinder:** When they want things done they come to me. I am not doing anything illegal. People come fight with me. I merely collect their complaints and take them to Dharam or Babu Ram (DJB employees). We are also just trying to earn a living. I understand what people go through but when they threaten me, I can also turn off the water (Feb 2nd, 2010).

While the corruption in Kathputli is fairly well established and the residents know all key players, in Savda Ghevra the situation is different. In places such as Kathputli, residents, in the face of inadequate formal ways to access water, rely on these networks of corruption, both within the State agencies and within the community (water mafia). The residents of Savda Ghevra, trapped in a space with no known informal networks and lack of formal connections with state agencies, are unable to use bribes to improve their access to potable water. One of the common complaints of Savda Ghevra's residents was the loss of these networks, despite the inherent corruption present in the system. This is similar to Davis's (2004) argument that corruption at the scale of the household emerges as 'speed money', where residents pay to expedite access to water or to hide their illegal water access. Gandy (2007) in his analysis of Mumbai's water sector found that corruption exists at multiple scales and water access processes are "vulnerable to large-scale political manipulation" (117). For example, Davis (2004) argues that the

engineering staff often implement and award contracts to specific firms or people. These are decided based on political influence and based on contractor cartels. The contractors often make payments to politicians who then influence the awarding of the contracts. The cartels pre-decide who should get the contract and all other applicants put in higher bids. This way, before people such as Balinder begin to interact with the residents, they have already been enmeshed in the corruption networks in the city. Within organizations such as Delhi Jal Board too, politicians determine the types of projects, and their locations.

Planning's response to the informality of slums is the creation of places such as Savda Ghevra. Savda Ghevra is formal and planned, but the water supply is more irregular even if it's officially provided. Women encounter conflict, violence, corruption and neglect as they attempt to access water in Savda Ghevra. In unplanned Kathputli, on the other hand, even though women bear the burden of collecting water, they are able to use informal networks to access multiple water sources. Planning, in its attempt to address informality, constricts the water access strategies in Savda Ghevra to just tankers, exacerbating the problems and struggles encountered by women as they attempt to collect adequate amounts of potable water.

Ultimately, in Savda Ghevra, as well as in 'unplanned' slum settlement of Delhi, politics of water play a critical role in life of all residents. Access to potable water remains unpredictable, gendered, irregular, and contested; political leaders, public agencies, NGOs, and community organizations use water as a tool in interdepartmental, local and regional politics; women retain no ownership over water or water sources and

struggle to access adequate amounts of potable water. This shows that water security must be understood in terms of socio-political contexts and gender instead of being thought of only in terms of the liter amount of water available. In this, the discourse of water security echoes traditional planning theory and practice that assume Western rationalist and economic standards as ideals for Third World cities. In the concluding chapter, I will suggest how water security, and more broadly, international planning theory can be rethought to better consider the mutual socio-political productions of urban nature and gender. I argue for a contextual planning theory (and for a water security discourse) that borrows from feminist and urban political ecology literature, explicitly engaging with gender inequalities in access to natural resources, such as water. This can inform better planning practices in Third World cities.

CHAPTER IX

Discussion: Gender, Water and the State

Based on my findings I argue that Delhi's current water crisis is not simply one of demand and supply; it is predicated on the gap between how New Delhi and its water are being imagined and constructed by the state and by the women responsible for collecting water every day. In attempting to understand how planning strategies impact women's access to water in New Delhi, I found that the city's water problems emerge from the disconnections between how policy is being written, enacted and negotiated through everyday (gendered) water management practices across multiple scales. Thus, I argue that rather than facing an impending water supply crisis, Delhi is currently in the midst of a socio-political water crisis. This crisis causes water (in)security to become an everyday lived reality in the city.

I have also suggested that water security is a discourse where 'liters of water available per capita per day' has become its global articulation. I am arguing for reimagining water security such that it includes the narratives, beliefs, meanings and practices that produces, and are produced during interactions with water. Water (in)security, then, emerges as contextual with social, political, physical and economic causes and implications. In this chapter I am arguing that even though the degree of water insecurity differs based on geographic location within the city, class, caste, religion, season, and other physical, social, political and ecological conditions, women from low

income neighborhoods emerge as the most water (in)secure population in cities such as New Delhi.

The exclusion of women and the failure to consider gender in water management practices has several implications, which I have documented in my study. Through my analysis of the water access strategies used at Kathputli Colony and Savda Ghevra, I found that women who spend the most time managing water in a household, remain excluded from all water-related decision making and continue to be the most affected by the low quality of available water. Based on my analysis of the inequalities in water access, I argue that the socio-political causes and implications of unequal water supply are consistently ignored as Delhi Government continues to implicate the 'expanding population' in the 'severe water and land shortages that will occur by year 2021' (Delhi Master Plan 2021). The DUEIIP does not suggest ways to address these current inequalities; however, it argues for augmenting water supply to meet the city's future needs. Any potential benefits of the increased capacity will, I argue, continue to be distributed in an unequal manner across the city and will be limited to 'water consumers' or those who are able to pay for the improved service.

Thus, as the state increases the supply of water to meet the 'customers' (Delhi Jal Board, 2004), the immediate needs of urban poor women who continue to live in underserved areas or are unable to pay for water are simultaneously rendered illegitimate or invisible. Ultimately, the state's language of demand-supply marginalizes the needs of urban poor women, as they continue receive potable water either as a gift from the

government or have to resort to 'stealing' water. In this way, the urban poor women become the straw men for the water shortages in Delhi, and the state uses 'water theft' as a discursive tool to hide the dramatic inequalities in the city's water sector and the everyday consequences of differentiated water access.

Secondly, through my analysis of the state strategies and practices related to water management, I found that planning practice is not improving water access for women. In planned Savda Ghevra, bound to the official water source, women are unable to meet their water needs through informal networks, and their control over water sources and over water supply is further diminished. In this chapter I will discuss the broader implications of this research for both planning practice and theory.

IMPLICATIONS FOR PRACTICE

Currently, there are over a 100 state and city agencies that oversee municipal services in Delhi. These agencies report to different ministries, departments, and political parties, resulting in a severe lack of coordination and cooperation in the city's public sector. I have documented the adversarial relationship between multiple public agencies involved in water management and supply and suggested that these are rooted in the fragmented multi-party political structure of New Delhi. I also found that the writing and implementation of policies at all levels of governments are affected by the lack of coordination between political parties and, consequently, their affiliate public agencies. Residents remain unaware of the responsibilities of each agency, leading to a severe lack of accountability in the water sector.

New Delhi's downstream location also places the city at the center of other political agendas. In the past, during local protests in neighboring states, water regulators controlling supply to Delhi were taken over, preventing surface water from flowing into the city's water treatment plants. This created water scarcity in the city, and with each such protest, water became more and more contested and politicized, and the technical and policy responses were rendered more inefficient.

These multi-agency and multi-scalar politics also create room for corruption and for middlemen who demand money in exchange for helping residents navigate the splintered inter-departmental relationships, which are common in most slums, including Kathputli Colony. The fragmentation in water governance also results in the lack of participation and community engagement. As one agency develops ways to engage residents, other agencies undermine participation or create factions, so that groups working with one political party are not permitted to benefit from the programs initiated by any other party.

The breakdown in interdepartmental cooperation and coordination results in inadequate water infrastructure in the city. Parts of the city have no pipes, no public standpoints, no storage tanks or any other water infrastructure, and other parts of the city are adequately (and sometimes excessively) served by the city's water infrastructure. Thus, incomplete water infrastructure further results in uneven water delivery across the city. Water access in the city becomes more and more based on housing type, which means that residents of planned, higher income neighborhoods have better water access

to legal water as compared to the adjoining slums. Local politicians use access to potable water as a way to reward (and punish) residents trapped in the city's fragmented politics structure. The consequences of this lack of interdepartmental organization and coordination and of the political nature of water in New Delhi become even more acute for planned resettlement colonies.

The official story is that Savda Ghevra is not a slum: it is more developed, more modern, and more organized than the informal settlements of New Delhi. However, the reality on the ground is different. Currently, Savda Ghevra has no water infrastructure and there are no plans in place to provide water pipes for this community, revealing the temporal disconnect in planning in New Delhi. . As planning attempts to address a future water crisis, create a future world-class city and rid the city of slums in the future, it becomes impotent in the present, creating places such as Savda Ghevra. This temporal disconnect is especially critical in the water sector. In Savda Ghevra, as with any other informal settlement of New Delhi, politics of water remain a critical part of life in the community. Access to potable water remains unpredictable, irregular, and contested, more so than in Kathputli. Political leaders, public agencies, NGOs, and community organizations use water as tool in interdepartmental, local and regional politics. In addition to these issues, residents retain no ownership over water or water sources, adding to the difficulty in accessing adequate amounts of potable water. As planning attempts to address informality through resettlement, the current problems in the water sector are exacerbated. This development of informality within the formal resettlement colonies is reinforced by the absence of public agencies in the community.

Thus, as planning failures deepen, slum and 'ex-slum' dwellers remain illegitimate and informal. NGOs operate within these temporal, spatial, and experiential interstices in planning, and play a particularly critical role at the urban fringe. In Kathputli Colony, NGOs involvement in water access is limited, although several organizations, such as JEET and Kalakaar Trust, test water quality at various sources in the neighborhood of water access in the community and attempt to create education and health programs related to the consequences of inadequate water supply, and water and sanitation behaviors. In Savda Ghevra, on the other hand, NGOs are involved in every aspect of water supply and distribution. They serve as a source of information for when the water will be delivered, and who to contact in case the water tanker does not arrive at all. Similar results were found through analysis of the role of NGOs in other cities such as Dhaka (Meinzen and Dick, 2003) and Mumbai (Gandy, 2008).

Because of the importance of NGOs at my research sites and in cities such as Dhaka, they also emerge as the only 'legitimate' connection between state agencies and residents. This role of NGOs has important implications for planning. A consequence of NGOs becoming the only 'legitimate' intermediaries between State and the peripheral urban poor communities they reinforce the illegitimacy of the residents, and planning becomes a tool of the State rather than one for communities and residents. However, the role of NGOs also highlights that community participation and outreach are critical to understanding the water access processes for communities. Delhi's slum residents employ local knowledges, cultural and traditional norms, and creative strategies to access water. These practices need to be integrated into water policies in order to meet their

specific needs of slum dwellers. The lack of visible participation by residents, and especially by women cannot be construed as implying a lack of interest in the use and management of water. Women succeed daily in somehow managing to access water for their needs. These informal systems are insecure and are often deemed illegal; however, without a clear understanding of the ways in which these systems operate and how, through participation, they can be incorporated into policy, the unequal access to water in cities such as New Delhi cannot be addressed.

My research, then, demonstrates the need to rethink not just water related planning strategies, but also slum clearance and resettlement policies in New Delhi. I also suggest the need for imagining a new role for NGOs, where they begin to challenge State 'truths' of water scarcity, development, and ideas of world-class and modern cities. NGOs can encourage the politicization of currently (and historically) depoliticized issues such as gender, and water access. NGOs can also focus on challenging the current political structure of places such as New Delhi by increasing the autonomy of community residents. This will begin to address the current skewed governance system in Global South cities. NGOs and public agencies also continue to focus on women as the objects of planning. My research challenges the constructions of gender within planning and policy and emphasizes the importance of analyzing women's role in water access, management and supply.

My fieldwork at both Kathputli Colony and Savda Ghevra indicated that through their interactions with water, women occupy urban, modern spaces while simultaneously

maintaining traditional roles. Even as water collection requires women to negotiate unequal policies using illegal strategies, men retain control over infrastructure, policy and economics related to water. Thus, even though in the everyday water access processes gender emerges as a fluid category, through the city's water management and access processes, normative roles and spheres are assigned to both men and women. This was exemplified in both Kathputli Colony and Savda Ghevra.

Women from Kathputli use multiple sources to meet their everyday water needs, ranging from state provided pipes to illegal water tapping. Women neither control the state supplied water, which is operated by the two tube-well operators, or the tapped water, which is overseen by the local water mafia. They have no access to grievance redress mechanisms through bhagidari and other similar schemes because they don't pay for water. Thus, the informality of women's water access in Kathputli puts them at constant risk of losing their water source. They face harassment and they are left dependent on the whims of men at multiple scales of decision-making, ranging from the local politician to the local water seller. The need to gather adequate quantities of water forces women to overlook pervasive water quality issues, even as they continue to bear greater health risks and disease burdens due to their sustained interactions with low quality water.

In Savda Ghevra too, women are the primarily responsible for gathering water for their families. However, their complete dependence on DJB's water tankers renders water access a desperate, contentious activity. Even more so than in Kathputli Colony, women

in Savda Ghevra risk harassment and male surveillance as they attempt to collect water from tankers. They remain more susceptible to health risks and injury, and they are expected to become primary caretakers of family member that contract any water related disease. Even as women retain no ownership of water sources in both Kathputli Colony and Savda Ghevra, they spend most time collecting, managing and worrying about water. The time spent on water access processes often detrimentally affects their ability to work and pursue an education. Even though women's subversive water access strategies challenge the male-dominated political and institutional spheres, in their attempt to keep their illegal practices hidden, they also allow for the current exclusionary practices to continue, and their strategies are ultimately unable to produce systemic changes in water distribution and management.

Scholars have drawn similar conclusions in other cities in the Global South, as well. Meinzen-Dick and Zwarteveen (1998) have examined how women's subversive strategies often challenge the (male) gendered policy decisions and community structures. In their study of the interactions between all-male water users associations and local government bodies in Kathmandu, Nepal, Meinzen-Dick and Zwarteveen's found that the women from the community refused to accept or abide by the new rules developed by the male groups. The water distribution in the community was based on water-sharing and contributing labor to maintain the infrastructure. The women continued to steal water to fulfill both paddy-farming and domestic needs and refused to contribute labor due to continued harassment from men, and due to other religious and cultural restrictions. While the male residents of the community attempted to create a set of

guideline for water access, women continued to use their own knowledges and undocumented rules to access water. In this example too, while women quietly challenge the policies on the ground, decision-making remains male-dominated and unaffected by women's subversive strategies.

In this way, water constitutes a crucial point of social and political control in the city. However, I argue that the state is not monolithic but instead emerges as a hierarchical and fragmented entity, which creates and participates in water access processes in multiple ways and also produces multiple citizens by providing, denying and ignoring the formal and informal access to water in the city. The state interacts with residents of Kathputli Colony and Savda Ghevra through the formal channels as engineers, politicians, and technicians and through informal networks of corruption, bribes, and middlemen. Even within government agencies, engineers and technicians are encumbered by political patronage that often prevents them from implementing plans and policies at the level of the community. As Ramesh, a DJB engineer, suggested during an interview at his office in January of 2010: "In Delhi, elections are lost and won on water."

During my research in Savda Ghevra I encountered local politicians that were scrambling to win over the large population being moved to the area to ensure electoral victories. My requests for interviews were immediately accepted and I was told to 'spread the word that they were interested in helping the new constituents'. (In Kathputli Colony, with its established political networks, interactions with politicians were harder to come

by and less informative). (Male) politicians at both sites insisted that they were especially interested in addressing 'women's issues', such as access to water and food. In this way, both the slums and resettlement colonies are providing an institutional space for local leaders to operate in, and water emerges as a critical tool to gain political control. Thus, planning for water access becomes a political tool to ensure (re)election, and the emphasis on women's role in water becomes a way to ensure women's participation in local politics.

However, despite weak attempts to court women for political reasons, women from both planned and unplanned slums remain the most vulnerable to the politics of water, and they continue to pay the greatest cost to meet the water needs of their family. Despite attempts to address women's empowerment and participation as themes in development projects, most such projects continue to construct women as subjects that have to be helped, empowered or taught so that they can learn 'better' water management practices (O'Reilly, 2010). The role of women in water management at local, regional and national remains peripheral, and women remain under-represented in state agencies at national, regional and local scales. Women remain unable to access decision-making and grievance redress spaces even as they continue to bear the disproportionate burden of lack of access to water. Women continue to be forced to fulfill traditional roles even as they navigate modern city spaces, and they bear the economic, physical, social and political burdens related to water access. Even as deficiencies in public water management systems force them to seek alternate methods to meet their water needs, their strategies are deemed illegal by the State.

In Kathputli, as my research has shown, even though women are labeled water thieves, informally appropriating water remains the only viable way to meet their daily needs. In planned spaces such as Savda Ghevra, women are no longer considered water thieves because they have water provided by the City. However, ironically, the lack of informal community networks in Savda Ghevra renders women more vulnerable to the higher scale corruption in the city's water management, their ability to access and control potable water is further diminished, and their dependence on non-state agents increases.

Thus, the informal water access networks of Kathputli and the formal ones in of Savda Ghevra highlight the state's inconsistencies in determining what practice is legal and illegal and place water at the center of social and political power relations in the city. Through its seemingly strategic presence in or absence from difference spaces, the state is deeply implicated in Delhi's current socio-political water crisis. Ultimately, the mutual socio-political constructions of water and gender, and planning's ironic disruption of informal water access networks, has major implications for a critical rethinking of the hegemonic discourse of water security and the attendant technicist, economist approaches to water management, access and distribution in Third World cities such as Delhi. More broadly, the study finds that urban nature is deeply gendered, which can help us reimagine international planning theory.

IMPLICATIONS FOR THEORY

In order to address this water insecurity, it is important to analyze it as a discourse that includes state institutions and engages with knowledges and narratives of women

accessing water. To begin, water security is simultaneously universal and contextual. Even as water security emerges as a global, universal concept, it is also a set of practices oriented towards accessing sufficient, safe and affordable water at the level of the community. Thus, for water security, local and global remain interwoven, and mutually affect each other. Local and global scales then are "not socially or politically neutral, but embody and expresses power relationships" (Swyngedouw, 1997: 1). Swyngedouw (1997) and Thrift and Amin (1994) argue that interconnected scales are affected by the relationships between spaces, and by processes of existing and historical production and consumption. Thus, for my project, water security is articulated within this nesting of spatial scales, and analyzed as both a universal construct and a particular set of practices.

Then, at the scale of the community, water security also has to engage with gendered water access processes. As women rupture the public/private binary by venturing out of their homes to access water whether from a community standpoint or a tanker, their rights to water and their claims to certain city spaces are depoliticized. Urban poor women, then, through discourses of empowerment, participation, tradition, and development are held to certain gender standards that define and limit their interaction with water. The men, even as they control the infrastructure, political and household decision-making in water, remain unaware of how women interact with water. Borrowing from Massey's (1994) analysis, I argue that the spaces of water related decision-making reflect the male-dominance of economic spaces and also reflect, reinforce and reproduce historic, social, and political constructions of gender. I have argued that the water

insecurity that emerges from this gendered, political water management is equally gendered and political.

As with water insecurity, planning practice in Third World cities, such as New Delhi, also remains disconnected from the reciprocal (re)production of gender and water. I have suggested that in planned resettlement colonies, women's informal, extra-legal networks are disrupted, making water access even more contentious than in unplanned settlements, where multiple (illegal) water sources and (criminalized) strategies exist. Thus, any planning strategy that affects access to urban water has to explicitly respond to the current practices and needs of women. The current slum relocation policy in the city has to alter its tunnel-vision focus on controlling land encroachment in the city, to address how people in resettlement colonies access resources, such as water.

As Indian cities attempt to adopt western ideals of modern and developed, the urban poor's right to the city is being strategically and publically reinterpreted. As land in cities such as Delhi becomes more expensive, inflexible binary categories of public/private and legal/illegal are being used to control access to city spaces. These controls are articulated in the city by legislative, judicial, planning, social and physical interventions.

In policy documents dating back to early 1950's, slums were seen as a national problem that needed to be solved (First Five Year Plan), then, in the 1980's the conversation changed to slum removal and slum-free cities. Now, slum rehabilitation, poverty alleviation, and slum upgrading are the keystones of government policies

responding to urban poverty. In each of these iterations, the state's focus has been on removing urban poor from the modern Indian city. Despite the intention to "integrate people into the urban fabric" (DDA, 2001), the state has repeatedly failed to respond to the needs of urban poor residents in all attempts to implement these ideas.

This becomes especially visible when looking at planned and unplanned spaces in the city. I argue that planning strategies can change the relationship between women and urban spaces, which means that understanding what is planned and unplanned became critical for my work. Roy (2009) refers to state failures as emerging from the 'idiom of planning', where the planning is implicated in the processes of deregulation and production of inconsistencies in the city. She argues that informal is defined through systems of class power, where the wealthier residents can claim infrastructure, services and exceptions from the state. I argue that in making visible only the informality linked to areas of poverty, planning and other state-sanctioned strategies create exclusionary complexes and decide who has access to modern city spaces. Here, through my research, I also question the planned/unplanned binary that governs the distinction between places such as Kathputli Colony and Savda Ghevra. Planning becomes both a narrative and a practice, and a limited understanding of planning dominates how city spaces are constructed in state imaginings and documents, and by residents of communities such as Kathputli and Savda Ghevra. My research also emphasizes the irony of planning in the city: while planning is considered necessary to create modern, developed spaces, residents of planned resettlement colonies have contested and inadequate access to potable water.

Batra (2010) contends that, in this way, Third World cities such as New Delhi become the new apartheid cities. Physically, this apartheid is put in practice through resettlement of slums at the periphery, through relocation of street vendors and peddlers from certain modern parts of the city, and through limited access to public services, such as water, in poor neighborhoods (See: Gidwani, 2010). Through the analysis of Delhi's colonial and post-colonial growth I have shown some of the ways that the city has institutionalized this apartheid. Access to water remains integral to the reproduction of the apartheid city.

The Indian State maintains that the water crisis is coming (Delhi Master Plan, 2021, 10th Five Year Plan). Drawing on the technical methods and language privileged in the discourse of water security, the state tells a particular story where 'groundwater levels are dangerously low in 2021' and where 'there will be a shortfall of approximately 300 MGD by 2021'. Water (in)security, then, instead of producing and being produced by all water access processes, simply becomes defined by the impending potable water shortage in the city, with inexorable links to the increasing population. After identifying the problem, the state responds by attempting to increase water supply, and the questions of who is encountering water insecurity in the city and why are lost in the rush to find the right technical solution to the city's water problem.[54]

[54] During an interview, a particularly helpful and informative DJB engineer told me "if you were an engineer, you could have worked for DJB given your interest and passion for solving the city's water problem." The fact that 'planning' was not a sufficient qualification to work in the city's water sector raises a critical question of who is planning in the city, what is the role of planning in this sector, and how is planning imagined in the context of Delhi and other Indian cities.

Thus, as the policy continues to focus on an upcoming crisis, the implied links between urbanization and overpopulation becomes a discursive tool to implicate slum dwellers as causes of water scarcity and as encroachers on public land. The state, by not including these neighborhoods in the formal water delivery network, ensures that women will seek private and illegal water sources. The informal systems of water collection, then, add to the other forms of informality that define slum spaces, and water becomes a critical tool with which the State directs the relationship between urban spaces and city residents. The legal/illegal binary thus has a pervasive presence and is also constantly challenged in Delhi's water sector. While water access strategies are based on laws and rules, they are also continuously reconstructed and socially interpreted. Women, unable to access water using legal means, are forced to engage in illegal actions to appropriate water for their families. Thus what is considered legal and illegal constantly shifts as women steal water to meet their everyday need. Public officials and workers too challenge the definitions of legal and illegal by not confronting this theft of water. The 'speed money' (Davis, 2000) paid by low-income residents to improve their access to public services also renders the boundary between legal and illegal processes as porous.

Planning strategies, then, interpret legal/illegal in a way that suits the interest of some residents of the city (Baviskar, 2006; Roy. 2009). A gendered version of Roy's (2009) argument that planning interprets and reinterprets the meaning of illegal based on class power in Third World cities thus emerges through my work. While groundwater theft in elite neighborhoods goes overlooked, slums are seen as epicenters of water theft. Water becomes both the symbol of, and reason for, a gendered social, political, economic

and ecological conflict in rapidly urbanizing Indian cities such as New Delhi. Urban poor women and slums become categorized as failed subjects and failed spaces of modernity, thus buttressing the vast contrast between the lived reality of the cities of the Global South and their planning imaginaries. Water is central to the state's strategies to develop and modernize the city, but at the same time, water is central to urban poor women's negotiations of the city.

Water security, then, is beholden to ideas of development and modernity. Based on my findings, I suggest that because of the emphasis on technicist and economist approaches in the discourse of water security, water delivery and access strategies fail to consider the socio-political production of water, and, consequently the gender inequities in access to water. As a result, planning strategies that emerge from the discourse of water security run the risk of perpetuating the inequities in water access in the cities of the Global South, such as in the case of New Delhi. Instead, I argue that the current discourse of water security, which tends to reproduce unequal access to water because of its Western, rationalist and economist heritage, can be productively reimagined by drawing on the perspectives on socio-political and economic power relations emerging from feminist and urban political ecology. Thus in my research I have attempted to unpack the social, political, material, and gender dimensions of water, demonstrating that the current inequalities in access to water stem from social, and not merely economic and technical, causes.

Ultimately, this critical review of the narratives and practices surrounding water security also contributes to emerging, critical perspectives in international planning theory. As in the case of water management strategies that emerge from the discourse of water security, planning in Third World cities remains focused on achieving Western standards of developed and modern. My findings indicate that, currently, planning strategies in Third World cities such as New Delhi are unable to address the everyday water needs of urban poor women. I found that gendered inequalities in water distribution are being produced in the city through water-based policies and their implementation. Drawing on these findings, and on the emerging critique of planning in the Third World, this study is attempting to rethink international planning theory from the perspectives of urban and feminist political ecology.

While scholars such as Roy, Bayat and Simone argue for a context-specific planning theory emerging from the Global South, they do not specifically engage with the mutual socio-political construction of gender and urban nature. However, I argue that in order to achieve water security (and access to other resources), international planning theory needs to address the deep, and gendered, inequities in access to nature. A combined urban political ecology/feminist approach, as I have shown in my research and analysis, can contribute to an international planning theory that explicitly examines the gendered social, political, ecological and economic processes in the city through the lens of equity and justice. Thus, by incorporating a critical perspective on the production of gendered urban nature in international planning theory, I call for the development of planning strategies that configure gender and access to urban nature along more equitable

lines. As my story about the struggles, practices and knowledges of the urban poor women in New Delhi has shown, water is ultimately not just a natural resource, it is a social construct and a site of struggle.

Bibliography

Abu-Lughod, L. "Writing against Culture." In *Recapturing Anthropology: Working in the Present*, by Richard Fox. Santa Fe, NM: School of American Research Press, 1991.

Agarwal, B. *A Field of One's Own: Gender and Land Rights in South Asia.* Cambridge, MA: Cambridge University Press, 1996.

Agarwal, B. "Gender and Environment Debates: Lessons From India." *Feminist Studies* 18, no. 1 (1992): 119-158.

Ahmed, S. *Flowing Upstream: Empowering Women Through Water Management Initiatives in India.* New Delhi: Foundation Books Pvt. Ltd, 2005.

AIjaz, R. "The Bhagidari System of Delhi Government." *The ORF Discourse* 3, no. 4 (2008).

Appadurai, A. *Modernity at Large: Cultural Dimensions of Globalizations.* Minneapolis, MN: University of Minnesota Press, 1996.

Appasamy, P. "Natural Resources Accounting for Water Resources Management in Bhavani basin." Madras Institute of Development Studies, Chennai, India, 1998.

Ariyabandu, R. "Household Water Security Using Rainwater Harvesting." *Rainwater Harvesting Conference.* New Delhi: IIT , 1999.

Asian Development Bank. " Water Resources Development in India: Critical Issues and Strategic Options ." Asian Development Bank, 2005.

Asthana, V. "Water Policy Processes in India: Discourses of Power and Resistance." Dissertation, The University of Illinois at Urbana Champaign, 2008.

Bakker, K. “A Political Ecology of Water Privatization.” *Studies in Political Economy* 70 (2005): 33-59.

Bakker, K and M. Kooy. “Splintered Networks? Water, Power and Knowledge in Jakarta: 1870-1945.” In *Hydropolis*, edited by M Gandy and S Frank. Frankfurt: Verlag, 2007.

Bakker, K. "From archipelago to network: Urbanization and water privatization in the South." *The Geographical Journal* 169, no. 4 (2003): 328-341.

Bakker, K. "Privatising water, producing scarcity: The Yorkshire drought of 1995." *Economic Geography* 76, no. 1 (2000): 4-27.

Banerjee, M. "Provision of Basic Services in the Slums and Resettlement Colonies of Delhi." Institute of Social Studies Trust, New Delhi, 2005.

Batra, L. "Out of Sight, Out of Mind." In *Finding Delhi Loss and Renewal in the Megacity*, edited by B Chaturvedi, 16-36. New Delhi: Penguin Books, 2010.

Baviskar, A. "Between violence and desire: space, power and identity in the making of metropolitan Delhi." *International Social Science Journal* 55, no. 175 (2003): 89-98.

Bayat, A. "From Dangerous Classes to Quiet Rebels: Politics of the Urban Subaltern in the Global South." *International Sociology* 15, no. 30 (September 2000).

Beauregard, R. "Bringing the City Back In." *Journal of the American Planning Association* 56, no. 2 (1990): 210-215.

Ben-Joseph, E. "Future of Standards and Rules in Shaping Place: ." *Journal of Urban Planning and Development* 130, no. 2 (2004): 67-74.

Bernard, R. "Unstructured and semi-structured interviewing." In *Research methods in anthropology: qualitative and quantitative approaches*, 208-236. Walnut Creek, CA: AltaMira Press., 1995.

Bhan, G. ""This is not the city I once knew" Evictions, Urban Poor and the Right to the City in Millenial Delhi." *Environment and Urbanization* 21, no. 1 (2009): 127-142.

Bhavnani, K, et al (Eds). *Feminist Futures: Re-imagining Women, Culture and Development.* New York, New York: Zed Books, 2003.

Blaikie, P M and Brookfield, H. *Land Degradation and Society.* London: Methuen, 1987.

Boserup, E. *Women's Role in Economic Development.* London: Earthscan, 1970.

Brown, W. *State of injury.* New Jersey: Princeton University Press, 1995.

Campbell, D. T. "Degrees of freedom and the case study." *Comparative Political Studies* 8, no. 1 (1975): 178-191.

Castree, N, and B Braun, . *Social Nature: Theory, Practice and Politics.* Oxford: Blackwell Publishing, 2001.

Center for Urban and Regional Excellence. "Sanjha Prayaas: Bhagidaari with the Poor: Socio-economic Study - Savda Ghevra Resettlement Colony." New Delhi, 2008.

de Certeau, M. *The Practice of Everyday Life.* Translated by Steven Rendall. Berkeley, CA: University of California Press, 1984.

Chakraborty, D. *Provincializing Europe: Postcolonial Thought and Historical Difference.* Princeton, New Jersey: Princeton University Press, 2000.

Dhar-Chakravarti, P.G. "Delhi's ongoing debate on informal settlements and work places- Issues of environmental jurisprudence." *International Workshop on Coping with Informality and Illegality in Human Settlements in Developing Cities,.* Brussels, 2001.

Chatterjee, P. "Nationalist Thought and the Colonial World." In *The Partha Chatterjee Omnibus*, by P Chatterjee. New Delhi: Oxford University Press, 1999.

Cleaver, F. "Choice, Complexity and Change: Gendered Livelihood and the Management of Water ." *Agriculture and Human Values* 15 (1998): 293-299.

Coates, S. "A Gender and Development Approach to Water, Sanitation, and Hygiene Programs." Briefing Paper, WaterAid, 1999.

Collignon, B and Vezina, M. "Independent Water and Sanitation Providers in African Cities: Full Report of a Ten-Country Study." Water and Sanitation Program.

Cornwall, A et al. "Gender Myths and Feminist Fables: The Struggle for Interpretive Power in Gender and Development." *Development and Change* 38, no. 1 (2007): 1-20.

Crabtree, BF., et al. "Selecting individual or group interviews." In *Successful Focus Groups: Advancing the State of the Art.*, by DL Morgan, 137–149. Thousand Oaks, CA: Sage.

Crush, J, ed. *Power of Development.* New York: Routledge, 1995.

D, McKenzie. "Household water delivery options in urban and rural India." *5th Stanford Conference on Indian Economic Development - 3–5 June .* Stanford, 2004.

Daga, S (2003) – CCS. *Private water supply in Delhi.* Center for Civil Society, New Delhi: CCS.

Davis, J. "Corruption in public service delivery: experience from South Asia's water and sanitation sector." *World Development* 35 (2003): 53-71.

Davis, M. *Ecology of Fear: Los Angeles and the imgination of Disaster.*

—. *Planet of Slums.* London: Verso Publishing, 2006.

De Wit, M. "The Slums of Bangalore - Mapping a Crisis in Overpopulation." *Geographic Information Systems* 2, no. 1 (1992).

Delhi Development Authority. *Draft Master Plan for Delhi - 2021.* New Delhi: Government of National Capital Territory of Delhi, 2006.

—. "Draft Master Plan for Delhi 2021." *DDA.* 2005. http://www.urbanindia.nic.in/moud/what'snew/mps-eng.pdf (accessed May 18th, 2011).

Delhi Jal Board. "Delhi Water and Sewerage Supply Reform Project." DJB, Government of National Capital Territory of Delhi, New Delhi, 2004.

Delhi Jal Board. "Summer Action Plan." Government of National Capital Territory of Delhi, New Delhi, 2007.

Dick, H and P. Rimmer. "Beyond the third world city: The new urban geography of south-east Asia." *Urban Studies* 35, no. 12 (1998): 2303–2321.

Douglas, M and J. Friedman. *Cities for Citizens: Planning and the Rise of Civil Society in a Global Age.* Toronto: John Wiley and Sons, 1998.

D'Souza, R. “Water in British India: The Making of 'Colonial Hydrology'.” *History Compass* 4 , no. 4 (2006): 621-628.

Duflo, E and R. Chattopadhyay. "Women as Policy Makers: Evidence from a Randomized Policy Experiment in India,." *Econometrica* 72, no. 5 (2004): 1409-1443.

Duncan, MT and DL Morgan. "Sharing the caring: family caregivers’ views of their relationships with nursing home staff." *The Gerontologist* 34 (1994): 235-44.

Dupont, V. "Conflicting stakes and governance in the peripheries of large Indian metropolises – An introduction." *Cities* 2007 (2 24): 89-94.

—. "Slum Demolition in Delhi Since the 1990s: An Appraisal." *Economic and Political Weekly* 43, no. 28 (2008): 79-87.

—. "Slum Demolitions in Delhi since the 1990's: An Appraisal." *Economic and Political Weekly*, no. 28 (July 2008): 79-87.

Dupont, V, Tarlo, E and Vidal, D (eds), ed. *Delhi. Urban Space and Human Destinies.* Delhi: Manohar-CSH, 2000.

Dwivedi, O. P. "Dharmic Ecology ." In *Hinduism and Ecology*, by C and Tucker, M (ed) Chappel. Cambridge, MA: Harvard University Press, 2000.

Elson, D. (Ed). *Male Bias in Development.* Edited by 2nd Ed. London: Manchester University Press, 1995.

Escobar, A. *Encountering Development: The Making and Unmaking of the Third World.* Princeton, New Jersey: Princeton University Press, 1995.

Fainstein, S. "Planning Theory and the City." *Journal of Education, Planning and Research* 25 (2005): 121-130.

Falkenmark, M and J Lundqvist. "Towards Water Security: Political Determination and Human Adaptation Crucial." *Natural Resource Forum* 21, no. 1 (1998): 37-51.

Flyvberg, B. "Five Misunderstandings About Case Study Research." 12, no. 2 (April 2006): 219-245.

Gandy, M. “Landscapes of Disaster: water, modernity and urban fragmentation in Mumbai.” *Environment and Planning A* 40 (2008): 108-130.

—. "Learning From Lagos." *New Left Review* 35 (May-June 2005).

—. “Rethinking Urban Landscape: Water Space and the Modern City.” *City* 8, no. 3 (2004).

—. *Water, Sanitation and the Modern City: Colonial and Post Colonial Experiences in Lagos and Mumbai.* Occasional Paper, Human Development Report Office , The United Nations Development Program, UNDP, 2006.

Geertz, C. "After the Fact: Two Countries, Four Decades, One Anthropologist." *The Jerusalem-Harvard Lectures.* Cambridge and London: Harvard University Press., `995.

Gleick, P. *The world’s water: 2006-2007.* Washington DC: Island Press, 2006.

—."Basic water requirements for human activities: Meeting basic needs." *Water International* 21, no. 2 (1996): 83-92.

Goldman, M. “How 'water for all!' policy became hegemonic: The Power of the World Bank and its transnational policy networks.” *Geoforum* 38, no. 5 (2007): 786-800.

Government of India. *Delhi Urban Environment and Infrastructure Improvement Plan.* Planning Department, Ministry of Environment and Forest and Government of National Capital Territory of Delhi, New Delhi: GOI, 2001.

—. *Economic Survey of India.* Ministry of Finance, 2008: GOI.

—. *First Five Year Plan 1956-1961.* Planning Commission, New Delhi: Government of India, 1956.

—. "Five-Year Plans." *Planning Commission of India.* 1951-; 1980-1985, 1997-2002; 2002-2007. http://planningcommission.nic.in/plans/planrel/fiveyr/welcome.html (accessed May 18th, 2011).

—. *National Policy for the Empowerment of Women.* Department of Women & Child Development, Ministry of Human Resource Development, New Delhi: Government of

—. *National Water Policy.* New Delhi: GOI, 1987.

—. "National Water Policy 1987." Ministry of Water Resources, New Delhi, 1987.

—. "National Water Policy 2002." Ministry of Water Resources, New Delhi, 2002.

—. *Report of the Working Group on Water Resources For the XI the Five Year Plan.* Ministry of Water Resources, New Delhi: Government of India, 2006.

—. "Tenth Five Year Plan, 2002-2007." Government Document, Planning Commission, Government of India, New Delhi, 2002.

Government of National Capital Territory of Delhi. "City Development Plan ." Department of Urban Development, Jawaharlal Nehru Urban Renewal Mission , New Delhi, 2006.

—. *Delhi Human Development Report : A Partnership for Progress.* Planning Commission , New Delhi: Oxford University Press, 2006.

—. "Delhi Urban Environment and Infrastructure and Improvement Plan -2021." Planning Department, New Delhi, 2001.

—. *Economic Survey of Delhi.* Planning Department, New Delhi: Government of NCT Delhi, 2004.

Green, C., S. Jokes and M. Leach. "Questionable links: approaches to gender in environmental research and policy." In *Feminist Visions of Development*, by C. Jackson and R. Pearson (eds). London and New York: Routledge.

Gugler, J. "What is Urbanizatin? An Operational Approach." *African Urban Notes* 4, no. 1 (1969): 9-25.

Gupta, A. *Postcolonial Developments: Agriculture in the Making of Modern India.* London: Duke University Press, 1998.

Gyabaah, K N. "Urbanization Effects: Environment and Health Effects in Africa." *Population and Environment Research.* Sunyani: Popultion-Envrionment Research Netwrok, 2005.

Hansen, T. B. "Sovereigns beyond the state: on legality and authority in urban India." In *Citizens, Migrants and State in the Postcolonial World*, by T.H Stepputat, 169-191. Princeton, NJ: Princeton University Press, 2005.

Hardiman, D. "The Politics of Water in Colonial India: The Emergence of Control ." In *Water first: Issues and Challenges for Nations and Communities*, by K and Wassen , P.J Lahiri-Dutt, 47-55. New Delhi: Sage, 2008.

Harvey, D. *Justice, Nature and the Geography of Difference .* Malden, MA: Blackwell , 1996.

—. "Megacities Lecture 4: Possible Urban Worlds." *megacities.* Twunstra Gudde Management Consultants. 2000. www.megacities.nl/lecture_4/possible.pdf (accessed May 20, 2011).

Hazards Center. *Status of Drinking Water Quality of Sub-Standard Settlements in Delhi.* Delhi: Hazards Center, 2010.

Hofwegen, P. "Water Security: Everybody's Concern and Everybody's Responsibility." Discussion Draft Paper, Institute for Water Education, UNESCO, Delft, 2007.

International Institute for Populataion Sciences . *National Family Health Survey (NFHS-3) 2005-2006.* Mumbai: Macro International, 2009.

Iyer, R. "Water Governance, Politics and Policy." In *Governance of water : institutional alternatives and political economy*, by V Ballabh, 18-36. New Delhi: Sage, 2008.

Jalan, J. and M.J. Ravallion. "Does piped water reduce diarrhea for children in rural India?" *Journal of Econometrics* 112 (2003): 153-173.

Jameson, F. *A Singular Modernity: Essay on the Ontology of the Present.* London & New York: Verso, 2002.

Jenks, C. *Los Angeles- Future of Heteropolis.* London: Academy Editions, 1993.

Jha, N. "Access of the poor to water supply and sanitation in India : salient concepts, issues and cases." IPC working paper ; no. 62, United Nations Development Programme, International Policy Centre for Inclusive Growth, Brasilia, 2010, 37.

Jolly, R, et al. *United Nations Human Development Report.* United Nations Development Program, New York: Oxford University Press, 1998.

Kaika, M and E. Swyngedouw. "Fetishising the Modern City: The Phantasmagoria of Urban Technological Networks." *International Journal of Urban and Regional Research* 24, no. 1 (2000): 120-138.

Kaika, M. "Interrogation the Geographies of the Familiar: Domesticating Nature and the Autonomy of the Modern Home." *International Journal of Urban and Regional Research* 28, no. 2 (June 2004): 265-286.

—. *The City Flows.* New York: Routledge, 2005.

Kaika, M, and E Swyngedouw. "The environment of the City of Urbanization of Nature." In *A Companion to the City*, edited by G. Bridge and S. Watson. Oxford: Blackwell Publishing, 2000.

Kallis, G. and de Groot, H.L.F. "Shifting perspectives on urban water policy in Europe. ." *European Planning Studies* 11, no. 3 (2003): 223-228.

Kiel, R. "Urban Political Ecology: A Progress Report." *Urban Geography* 24, no. 8 (2003): 723-738.

Klein, I. "Urban development and Death in Bombay - 1870-1914." *Modern Asian Studies*, 1989: 725-254.

Koolhaas, R, et al. *Mutations.* Barcelona: ACTAR, 2000.

Kundu, A. *In the Name of the Poor: Access to Basic Services.* New Delhi: Sage, 1993.

Lahiri-Dutt, K. "Nadi O Nari: Representing the River and Women of the Rural Communities in the Bengal Delta." In *Fluid Bonds: Views on Gender and Water* , edited by K Lahiri-Dutt. Kolkata: STREE, 2006.

Leach, M. "Earth Mother and Other Ecofeminist Fables: How a Strategic Notion Rose and Fell." *Development and Change* 38 (2007): 67-85.

Lefebvre, H. *The Production of Space.* Massachusetts: Blackwell Publishing, 1991.

Lipton, M. "Urban Bias Revisited ." *Journal of Development Studies* 20, no. 3 (1984): 139-166.

Lundqvist, J and M. Falkenmark. *World freshwater problems: call for a new realism. Comprehensive Assessment of the freshwater resources of the world.* FAO, Stockholm: SEI, 1997.

Lundqvist, J, P. Appasamy, and P. Nelliyat. "Soc. Lond. B 29 December 2003 vol. 358 no. 1440 1985-1996." *Dimensions of Third World water security* 358, no. 1440 (2003): 1985-1996.

Lundqvist, J. and P. Gleick. *Sustaining Our Waters into the 21st Century.* Stockholm: Stockholm Environment Institute, 1997.

Marchant, M and J. Parpart (Eds). *Feminism Postmodernism Development.* London and New York: Routledge., 1995.

Massey, D. *Space, Power and Gender.* Oxford: Blackwell Publishing, 1994.

Mawdsley, E. "Hindu Nationalism, neo-traditionalism and environmental discourses in India." *Geoforum* 37 (2005): 380-390.

Mazumder, D. et al. "Arsenic levels in drinking water and the prevalence of skin lesions in West Bengal, India." *International Journal of Epidemiology* 27, no. 5 (1998): 871-877.

McCann, B. "The price of prosperity Water 21." Managing International Water Association, 2002, 39.

McIntosh, A.C. *Asian Water Supplies: Reaching the Urban Poor.* Asian Development Bank, London: IWA Publishing, 2003.

McKenzie, D., and I. Ray. 2004. "Household Water Delivery Options in Urban and Rural India." *5th Stanford Conference on Indian Economic Development.* Stanford, 2004.

Mehta, L. *Displaced by Development: Confronting Marginalisation and Gender Injustice.* London: Sage, 2008.

—. *Poetics and Politics of Water: The Naturalization of Scarcity in Western India.* New Delhi: Orient Longman, 2005.

—. "Water and human development: capabilities, entitlements and power ." *Background paper for the 2006 Human Development Report 'Beyond Scarcity: Power, poverty and the global water crisis'* (Institute of Development Studies), 2001.

—. "Women Facing Submergence: Displacement and Resistance in the Narmada." In *Identities, Nation, Global Culture*, by V and Unnithan, M (eds) Damadoran. New Delhi: Manohar, 2000.

Meinzen-Dick, R. and P. Appasamy. 2002. "Urbanization and intersectoral competition for water in Finding the source: The linkages between population and water." Environmental Change and Security Project, Woodrow Wilson International Centre for Scholars, Washington DC, 2002, 27-51.

Meinzen-Dick, R. and M. Zwarteveen. "Gendered participation in water management: Issues and illustrations from water users' associations in South Asia." *Agriculture and Human Values* 15 (1998): 337-345.

Mies, M. and V. Shiva. *Ecofeminism.* London: Zed Books, 1993.

Moffat, T and E Finnis. "Considering social and material resources: The political ecology of a peri-urban squatter community in Nepal." *Habitat International* 29 (2005): 452-468.

Mohan, R, and et al. *The India Infrastructure Report: Policy Imperatives For Growth and Welfare.* Ministry of Finance, National Council of Applied Economic Research, New Delhi: Government of India, 1996.

Mohanty, C. T. "Under western eyes: Feminist scholarship and colonial discourses." In *Third world women and the politics of feminism*, edited by C, Russo, A and Torres, L Mohanty, 338. Bllomington: Indiana University Press, 1991.

Mohanty, C. "Under Western Eyes." In *Third World Women and the Politics of Feminism*, by C. Mohanty. Bloomington, IN: Indiana University Press, 2002.

Mollinga, P. "The Water Resource Policy Process in India: Centralisation, Polarisation and New Demands on Governance." In *Institutional Alternatives and Political Economy*, by V (ed) Ballabh, 339-371. New Delhi: Sage, 2008.

Morgan, DL. *Focus Groups as Qualitative Research.* Thousand Oaks, CA: International Educational and Professional Publishers, 1996.

Motiram, S and L. Osberg. "Social Capital and Basic Goods: The Cautionary Tale of Drinking Water in India." *Economic Development and Cultural Change* 59, no. 50875 (2010): 1-29.

Muir, J. *'Are you taking notes on us?': reflections on case study research in urban environments.* Vol. 9, in *Qualitative Urban Analysis: An International Perspective, Studies in Qualitative Methodology* , by S.M. Thompson, and M. Tonts (eds.) P.J. Maginn. Oxford: Elsevier, JAI, 2008.

Muteva, P. " Health and Hygience Education to Promote Safe Handling of Drinking Water and Appropriate Use of Snaitlation Facilities in Formal Settlements." Project Proposal, United Nations, 2001.

Oldenburg, V. *The Making of Colonial Lucknow.* New Delhi: Oxford University Press, 1989.

O'Reilly, K. "Combining sanitation and women's empowerment in water supply. ." *Development in Practice, 20th Anniversary issue* 20, no. 1 (2010): 45-56.

—. "Traditional' women, 'modern' water";: Linking gender and commodification in Rajasthan, India." *Geoforum* 37 (2006): 958-972.

Pearson, R. and C. Jackson "Introduction: Interrogating development: feminism, gender and policy." In *Feminist Visions of Development: gender analysis and policy*, by R and Jackson, C (eds) Pearson. London: Routledge, 1998.

Peet, R. and M.J Watts (eds). *Liberation ecologies: environment, development, social movements.* Routledge, 1996.

Pereira, N. "People's Spaces: Familiarization, Emergent Spaces and Subject Formation in Colombo." *Planning Theory* 8 (2009): 51-75.

Pigg, S.L. "Inventing Social Categories Through Place: Social Representations And Development In Nepal." *Society For Comparative Study Of Society And History* 34, no. 3 (1992): 419-513.

Prashad, V. "The Technology of Sanitation in Colonial Delhi." *Modern Asian Studies* 35, no. 1 (2001): 113-155.

Prokopy, L.S. "The Relationship between Participation and Project Outcomes: Evidence from Rural Water Supply Projects in India." *World Development* 33, no. 11 (2005): 1801-1819.

Raghupathi, U. "A Scorecard for India, Tariffs and Subsidies in South Asia." Paper 2, World Bank, PPIAF and Water and Sanitation Program , Washington, D.C, 2003.

Raghupathi, U, and et al. *Status of Water Supply, Sanitation, and Solid Waste Management in Urban Areas.* Project Report, Central Public Health and Environmental Engineering Organisation, National Institute of Urban Affairs, June: Government of India, 2005.

Rao, V. " Slum as theory: the South/Asian city and globalization." *International Journal of Urban and Regional Research* 30, no. 1 (2006): 225-232.

Ray, B. *Water: The Looming Crisis in India.* Plymouth: Lexington Books, 2008.

Reiker, M and K. Ali. "Introduction to Urban Visions of the Margins: Urban Margins: Envisioning the Contemporary Global South." *Social Text* 26, no. 95 (2008).

Robinson, J. "Global and World Cities: A View from Off the Map." *International Journal of Urban and Regional Research* 26, no. 3 (2002): 531-554.

Rocheleau, D. "Gender and Biodiversity: A Feminist Political Ecology Perspective." *IDS Bulletin* 1 (1995): 9-16.

Rocheleau, D, and B Thomas-Slayter. *Feminist Political Ecology.* London: Routledge, 1996.

Rocheleau, D, B Thomas-Slayter, and E Wangari, . *Feminist Political Ecology: Global Issues and Local Experiences.* London and New York: Routledge Press, 1996.

Rogers, A and J. Williamson. "Migration, Urbanization and Third World Development: An Overview." *Economic Development and Cultural Change* 30, no. 3 (1982): 464-482.

Roy, A. "A "Public" Muse: On Planning Convictions and Feminist Contentions." *Journal of Planning Education and Research* 21 (2001): 109-126.

—. *City Requiem, Calcutta: Gender, and the Politics of Poverty.* Minneapolis: University of Minnesota Press, 2003.

—. "Slumdog Cities: Rethinking Subaltern Urbanism." *International Journal of Urban and Regional Research* 35, no. 2 (Feb 2011): 223-238.

—. "Strangely Familiar: Planning and the Worlds of Insurgency and Informality." *Planning Theory* 8 (2009): 7-11.

—. "Why India Cannon Plan Its Cities: Informality, Insurgency and the Idiom of Urbanization." *Planning Theory* 8 (2009): 76-87.

Ruet, J and S. Tawa Lama-Rewal, ed. *Governing India's Metropolises.* New Delhi: Routledge, 2009.

Sandercock, L. "Cities of (In)Difference and the Challenge for Planning." *DISP* 140 (2000): 7-15.

Sassen, S. *The global city: New York, London, Tokyo.* Princeton, New Jersey: Princeton University Press, 2001.

Satterwaite, D. *An Urbanizing World: Global Report on Human Settlements.* United Nations Centre for Human Settlements, Oxford University Press, 1996.

Savenije, H and P. van der Zaag. "Water as an Economic Good and Demand Management Paradigms with Pitfalls." *Water International* (International Water Resources Association) 27, no. 1 (2002): 98-104.

Sengupta, N. "The Indigenous Irrigation Organisations in South Bihar." *The Indian Economic and Social History Review* 37, no. 2 (1980): 157-187.

Sharan, A. "Claims on Cleanliness: Environment and Justice in Contemporary Delhi." *Sarai Reader (The Cities of Everyday Life)*, 2002: 31-37.

Shiva, V. *Water Wars; Privatization, Pollution, and Profit.* Cambridge, MA: South End Press, 2002.

—. *Staying Alive: Women, Ecology and Survival in India.* London: Zed Books, 1988.

—. *Stolen Harvest: The Hijacking of the Global Food Supply.* Cambridge, MA: South End Press, 2000.

World Without Water. Documentary. Produced by True Vision Productions. Performed by Vandana Shiva. 2006.

Shultz, B and S. Uhlenbrook. "Water Security: What it is and What it May Imply." Discussion Draft Paper, Institute for Water Education, UNESCO, Delft, 2007.

Simone, A. *For the City Yet to Come.* Duke University Press, 2004.

Singh, A. *Delhi's Watery Woes: A Cross-Sectoral Analysis of the Water Crisis in Delhi.* Center for Trade and Development, New Delhi: CENTAD, 2006.

Singh, S. P. "Irrigation and Input Use Efficiency in Agriculture." *The Business Review* 5, no. 1&2 (1999): 247-258.

Sivaramakrishnan, K et al. *Handbook of Urbanization in India: An Analysis of Trends and Processes.* New Delhi: Oxford University Press, 2005.

Smith, L. *The Urban Political Ecology of Water in Cape Town, South Africa.* Background Research Series: Municipal Research Project, 2000.

Sovani, N. V. "The Analysis of Over-Urbanization." *Economic Development and Cultural Change* 12, no. 2 (1964): 113-122.

Spivak, G. "Can the Subaltern Speak? Speculations on Widow-Sacrifice." In *A Critique of Postcolonial Reason: Towards a History of the Vanishing Present* , by G. Spivak. Cambridge, MA, 1999.

Stake, R. "Qualitative Case Studies." In *The Sage Handbook of Qualitative Research*, by N. K. Denzin & Y. S. Lincoln (Eds.), 433-466. Thousand Oaks, CA: Sage.

—. *The Art of Case Research.* Thousand Oaks, CA: Sage, 1995.

Sultana, F. "Community and Participation in Water Resources Management: Gendering and Naturing Development Debates from Bangladesh." *Transactions of the Institute of British Geographer* 34, no. 3 (2009): 346-363.

—. "Gendered Waters, Poisoned Wells: Political Ecology of the Arsenic Crisis in Bangladesh." In *Fluid bonds: Views on Gender and Water*, edited by K Lahiri-Dutt, 362-386. Kolkata: STREE, 2006.

Sundar, N. "Is Devolution Democratisation." *World Development* 29, no. 12 (2001): 2007-2024.

Swyngedouw, E. *Social Power and the Urbanization of Water: Flows of Power.* New York: Oxford University Press, 2004.

Swyngedouw, E, and N Heynen. “Urban Political Ecology: Justice and the Politics of Scale.” *Antipode* 35, no. 5 (2005).

Swyngedouw, E, M Kaika, and E Castro. “Urban Water: A Political Ecology Perspective.” *Built Environment* 28, no. 2 (2002): 124-137.

Swyngedouw, R and M. Kaika. "Fetishizing the Modern City: The Phantasmagoria of Urban Technological Networks." *International Journal of Urban and Regional Research* 24, no. 1 (March 2000): 120-138.

Tarlo, E. "Welcome To History: A Resettlement Colony in the Making." In *Delhi: Urban Space and Human Destinies*, edited by V, Tarlo, E and Vidal, D (eds.) Dupont. New Delhi: Manohar, 2000.

Tarver, J. *The Demography of Africa.* Westport, CT: Greenwood Publishing Group, 1996.

Tashakkori, A. and C. Teddlie. *Mixed methodology: combining qualitative and quantitative approaches.* Thousand Oaks, CA: Sage, 1998.

TCE Consulting Enginners Limited. "Study on Rationalisation on Pattern of Distribution of Water for Delhi." Delhi Jal Board, Government of National Capital Territory of Delhi, New Delhi, 2003.

The United Nations. *State of Women in Urban and Local Government - India.* UNESCAP, New Delhi: UN, 2000.

Tinker, I. "The Making of a field: advocates, practitioners, and scholars." In *Persistent Inequalities: Women and World Development*, by Irene Tinker (Ed.), 27-53. Oxford: Oxford University Press, 1990.

Tipple, G and S. Speak. "Homelessness in developing countries." Global Urban Research Unit, University of Newcastle upon Tyne, 2003.

Trotz, L and A. Peake. *Gender, Ethnicity and Place: Women and Identities in Guyana.* London: Routledge, 1999.

Truelove, Y. "(Re-)Conceptualizing Water Inequality in Delhi, India through a feminist political ecology framework." *Geoforum* 42, no. 2 (2011): 143-152.

—. "On The Verge of a Water Crisis? State Discourses and the Production of Water Inequality in Delhi, India." *Thesis.* UMI 1447670, 2001.

United Nations Development Program. *Overcoming Barriers: Human Mobility and Development.* Human Development Report, United Nations, New York: Palgrave McMillan, 2009.

United Nations. "Every Drop Counts." Food and Agriculture Organization, Rome, 2007.

United Nations. "Human Development Report." United Nations Development Program, New York, 2006.

—. *The Right to Water.* UN HABITAT, United Nations, Geneva: Unted Nations, 2010.

USAID. "Safegaurding the World's Water." Report on USAID Water Activities , USAID, 2008.

Walton, J. "Accumalation and Comparitive Systems: Theory and Some Tentative Conrtasts of Latin America and Africa." *Compartitive Urban Research* 5, no. 1 (1977): 5-18.

Watson, S and G. Bridge. *A Companion to the City.* Oxford: Blackwell Publishing, 2000.

Whittington, D. "Possible Adverse Effects of Increasing Block Water Tariffs in Developing Countries." *Economic Development and Cultural Change* (University of Chicago Press) 4, no. 1 (October 1992): 75-87.

Whittington, D. et al. *Household Demand for Improved Sanitation Services: A case study of Kumasi, Ghana: Water and Sanitation Report No 3.* Washington DC: UNDP - World Bank, Water and Sanitation Program, 1992.

Williams, G. "Modernizing Malthus: the World Bank, population control, and the African environment." In *Power of Development*, edited by J. CRUSH (Ed.), 158-175. London: Routledge, 1995.

Wilson, E. *Sphinx in the City: Urban Life, The Control of Disorder, and Women.* Berkeley and LA: University of California Press, 1991.

World Bank. *Water Resource Sector Strategy: Strategic Direction for World Bank engagement.* International Bank for Reconstruction and Development, Washington DC: The World Bank, 2004.

World Bank,. *Water resources sector strategy: strategic directions for World Bank engagement.* The World Bank, 2009.

Xenos, N. *Scarcity and Modernity.* New York, NY: Routledge, 1989.

Yiftachel, O. "Theoretical Notes on 'Gray Cities': The Coming of Urban Apartheid? ." *Planning Theory* 8 (2009): 88-100.

Yin, R. *Case Study Research: Design and Methods.* Thousand Oaks, CA: Sage, 2003.

Zerah, M H. *Water: Unreliable Supply in Delhi.* New Delhi: Manohar Publishers, 2000.

Zimmerer, K ., and T. J. Bassett. *Political ecology: an integrative approach to geography and environment-development studies.* New York, NY: Guilford Press, 2003.

Zwarteveen, M.Z. "Water: from Basic Need to Commodity. A discussion on Gender and Water Rights." *World Development* 25, no. 8 (1997): 1335-1350.